

VIRGINIA WILDLIFE

MARCH/APRIL 2024

FOUR DOLLARS







VIRGINIA WILDLIFE

MARCH/APRIL 2024

VOL. 85, NO. 2

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Cover: A spring gobbler struts his stuff, see page 12. ©Mike Roberts

Left: Trout fishing on the Rapidan River, see page 6. Meghan Marchetti/DWR

Back cover: Dr. Brad Hatch peers into a newly constructed indigenous eel pot, see page 32.

Lynda Richardson/DWR



LYNDA RICHARDSON
Art Director

Dear readers, friends, colleagues, writers, and photographers with whom I have worked over these many years, I have decided to retire from my position as art director for *Virginia Wildlife* magazine. It has been an honor to have served you.

I started my partnership with *Virginia Wildlife* nearly 40 years ago shooting stories and submitting photos as a freelance photographer. Then, in March of 1992, I began writing the Photo Tips column of the magazine. In 2016, I began to work for the magazine as the art director. I am very grateful to the staff who hired me years ago, Bob Duncan, Lee Walker, Sally Mills, and Carol Kushlak, who believed enough in me to offer a position that was a lifelong dream. I have always wanted to work on the staff of a magazine, especially one I love.

Retirement will bring me full circle. In third grade, I received my first camera, an Instamatic. My love of nature was encouraged by my parents with outdoor adventures, books, and subscriptions to wildlife magazines such as *Ranger Rick*. Photography was the perfect way for me to explore the outdoors. I was so inspired that, also as a third grader, I created my own magazine, *Sea Manatee*.

In 1976, I was given my first 35mm SLR camera to take on a high school-sponsored trip to East Africa. As a teenager, these two gifts were beyond anything I could ever imagine—a dream come true. In college, with chemistry thwarting my veterinary aspirations, my focus turned to photography. Once I graduated, I sought out other photographers from whom I could learn. I assisted for studio, fashion, food, travel, and news photographers, photographing everything from U.S. presidents to American eels.

Believing in myself was key to having others believe in my potential. I was able to earn freelance assignments from prestigious clients such as the National Wildlife Federation, The Nature Conservancy, the National Geographic Society, *Smithsonian* magazine, and many other magazines and organizations in the United States and overseas. And, of course, a publication I hold close to my heart, *Virginia Wildlife* magazine.

So, it is with mixed emotions that this will be my last issue of *Virginia Wildlife* as art director. I love my job and everyone I work with. I love the great work that the Virginia Department of Wildlife Resources is doing. The department I work under, Outreach, has grown into a fantastic team of dedicated, passionate, and hard-working folks who I'm really going to miss. But sometimes one must make a choice, and I'm choosing to go back to being a wildlife and environmental photographer, even if it's just for myself. I am looking forward to spending more time with my husband, my pups, and family and friends. I plan to fish, travel, write, and shoot photographs that will hopefully make the world a better place. And, I hope to finally write a book that shares my crazy life as a freelance wildlife and environmental photojournalist.

So, a big thank you and hug to everyone I have had the honor to be associated with. My next amazing journey starts now, and hopefully you'll continue to see my name on the pages of this magazine.



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MISSION STATEMENT

Conserve and manage wildlife populations and habitat for the benefit of present and future generations. Connect people to Virginia's outdoors through boating, education, fishing, hunting, trapping, wildlife viewing and other wildlife-related activities. Protect people and property by promoting safe outdoor experiences and managing human-wildlife conflicts.

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Printing by Progress Printing Plus, Lynchburg, VA

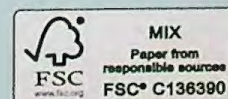
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Virginia Wildlife (ISSN 0042 6792) is published bimonthly by the Virginia Department of Wildlife Resources. Send all subscription orders and address changes to *Virginia Wildlife*, PO Box 2042, Williamsport, PA 17703. Address all other communications concerning this publication to *Virginia Wildlife*, P. O. Box 90778, Henrico, Virginia 23228-0778. Subscription rates are \$12.95 for one year, \$23.95 for two years; \$4.00 per each back issue, subject to availability. The Canadian rate is \$24.95 for one year and \$35.95 for two years, payable in U.S. funds. No refunds for amounts less than \$10.00. To subscribe, call toll-free (800)710-9369.

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From Our Readers



Good Points Made

Matt Knox has a good article on deer hunting in the November/December

2023 issue. I grew up deer hunting in Western Kentucky where the deer are much larger than in Virginia. I adjusted to the smaller size as I began hunting in Virginia. But over time, as the deer seemed to get smaller and smaller, their ribs often showing as they searched for food, I finally quit hunting. I confess, seeing 15 deer congregated in my back yard didn't

help. Nor did the smaller racks now prevalent, at least in eastern Virginia. It seems that the numbers have exploded, and until the herds are reduced this will continue.

Dr. Mike Harton, Midlothian, Virginia

Spring Turkey Morning

I left my wife warm in bed. "I hope you get him," was all she said. I parked at a rusty gate; must hurry and not be late. Although I hadn't took time to scout, he was still here I had no doubt. Here last fall I'd seen longbeards not a few; a barred owl then asked "who-cooks-for-you?" From up through some pines a gobbler answered clear as a bell. I made my way to him down a worn deer trail. He gobbled again and I got my bearing. He was just ahead on the edge of a clearing. I eased down down against a big red oak. The ground was wet, and my pants began to soak. "God, let me get him," was my earnest prayer. He gobbled again, so I knew he was still there. While the shotgun was resting on my knee, with slate and striker I made a kee-kee. He gobbled again and my heart made a bound, for this time I could tell he was on the ground. He was just beyond an ancient deadfall. I softly yelped out one last call. Long moments passed as I sat still as a stone. The numbness was settling in on my poor tailbone. Had he seen me? I couldn't tell. The mosquitos buzzed around me; I switched on my thermacell. The next time he gobbled, he was further away. Now it was either make a move or try again another day. The choice was easy. Shouldering my gun, I put my slate in its pocket and broke into a run. It's times like these when doubts abound. Nothing to do but cover ground. He was heading for the next hollow. I knew it would be foolhardy to try to follow. With the redbuds and dogwoods all abloom, making a big circle I gave him plenty of room. I made my way through oak and pine. If the plan worked, he would be mine. He gobbled again at the caw of a crow. I didn't have much further to go. Once I got as close as I dared, a felled poplar log became my chair. When that old Tom heard the yelps from the slate, he thought that he had found a date. He didn't know that it was a man. It was then I saw his chestnut-tipped fan. He lifted his head as I made a cluck. I then claimed my prize and headed for the truck.

Jud Davis, Bedford, Virginia



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We want to hear from you! We welcome letters to the editor, questions for our staff, photos you capture of wildlife, and experiences you want to share. Please include your name and address when you send correspondence to editor@dwr.virginia.gov via email or by mail to Editor, Virginia Wildlife, P.O. Box 90778, Henrico, VA 23228-0778. Correspondence chosen for publication may be edited for clarity and/or length.

Connect with Us!



THE RAPIDAN RUNS THROUGH IT



The public land offerings in the Rapidan River area are rich with history and opportunities for fans of wild places.

by Serena Grant/DWR

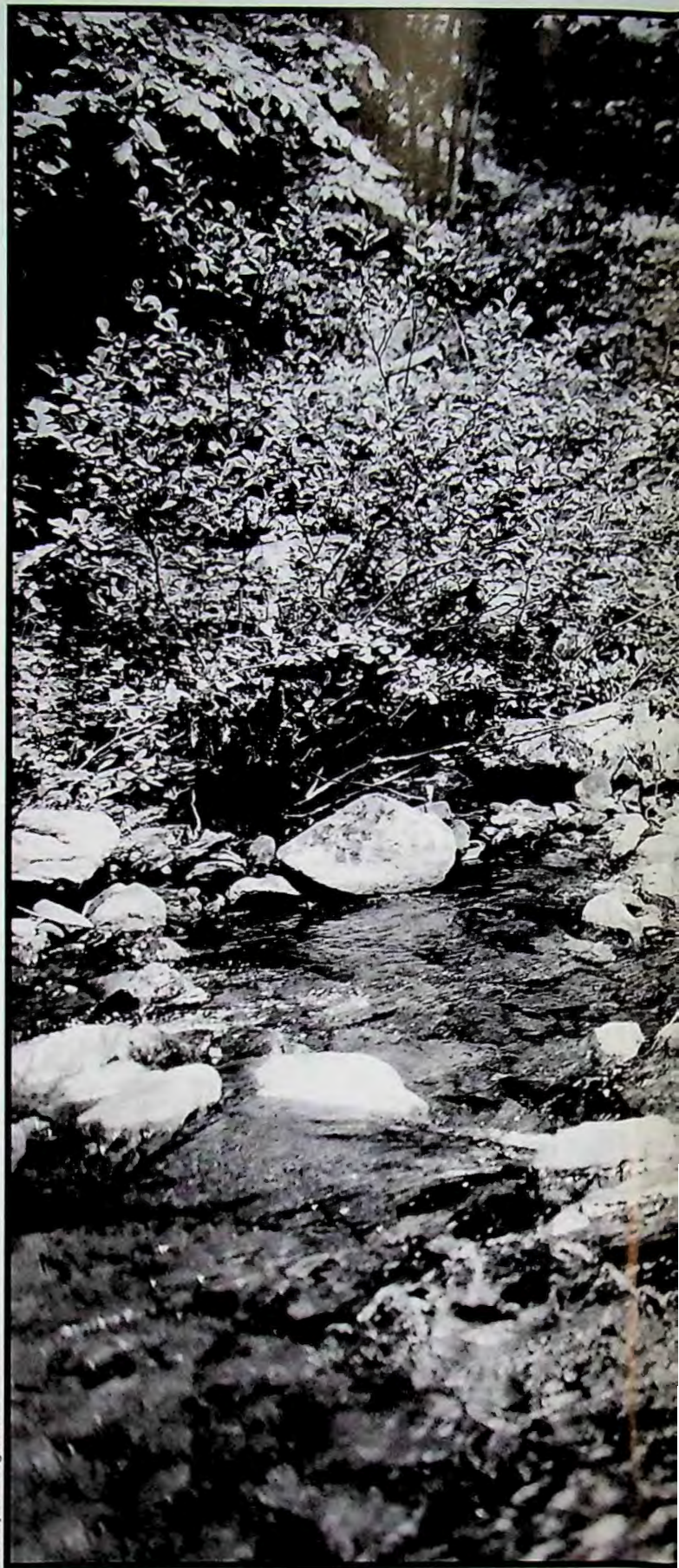
“Fishing is a chance to wash one’s soul with pure air, with the rush of the brook, or with the shimmer of the sun on the blue water,” wrote former President Herbert Hoover in his 1963 book “Fishing for Fun and to Wash Your Soul.”

During his tenure as the 31st President of the United States, it was the Rapidan River that provided Hoover, an avid angler, that chance to escape Washington, D.C., and wash his soul as he navigated the challenges of leading the country. The area’s rich history and the river’s pristine trout waters have long been revered by historians and outdoorsmen alike. Whether you’re an angler, a hunter, or just enjoy being outdoors, the Rapidan River area—including both Shenandoah National Park and Rapidan Wildlife Management Area (WMA)—has something to offer you.

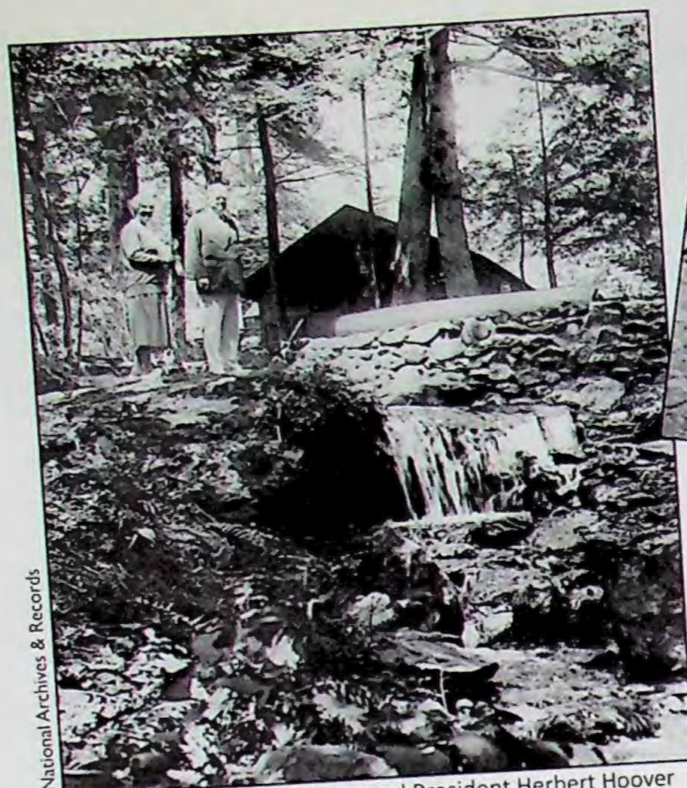
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Right: President Herbert Hoover fly fishes for native brook trout in the Rapidan River near his personal retreat, Rapidan Camp.

Library of Congress







First Lady Lou Henry Hoover and President Herbert Hoover with the Brown House in the background.



Center, top: President Herbert Hoover poses with a trout he caught on his fly rod.



Right: Guests of the Hoovers gather at the Brown House.

History on the Rapidan

Originally a small-town settlement, the Rapidan Camp site at the head of the Rapidan River is best known for its affiliation with Hoover. After Hoover won the presidential election in late 1928, he tasked his secretary, Lawrence Richey, with scouting sites for a presidential retreat, under the conditions that it included a trout stream, a minimum elevation of 2,500 feet, and a location within 100 miles of the capital.

William Carson, the chairman of the Virginia State Commission for Conservation and Development at the time, encouraged Hoover to consider the Rapidan River area based on its exceptional trout fishing. "The stocking of the streams is in the hands of the proper persons and is being attended to," Carson wrote in a letter to the Hoovers.

The Hoovers visited the Rapidan Camp site in January 1929 and agreed that its 164 acres on the eastern slope of the Blue Ridge Mountains suited their needs. Hoover was inaugurated in early March, and a local newspaper article dated March 22, 1929, announced the choice of the upper Rapidan location for a Presidential fishing lodge. It was the first retreat built specifically for presidential use and pre-dates the current

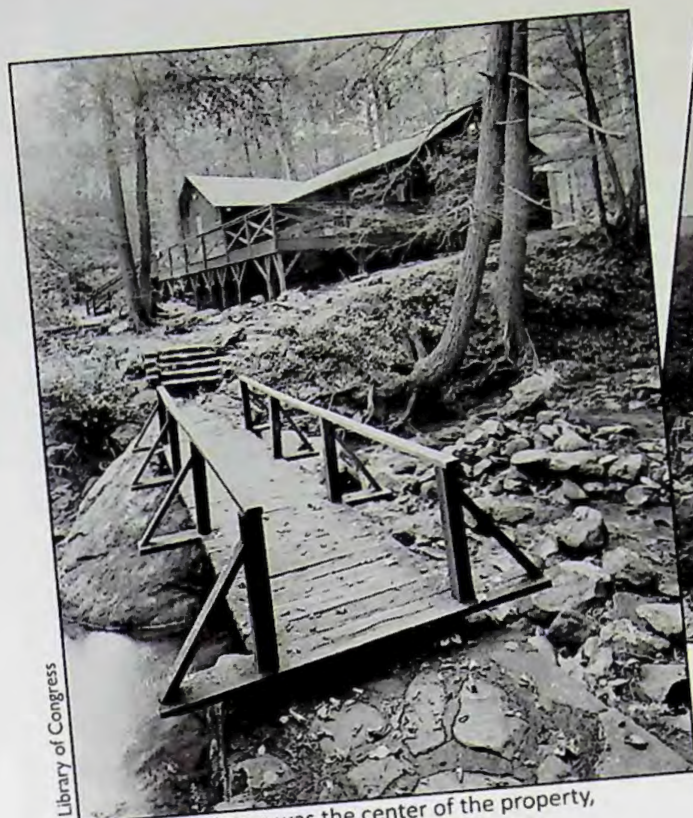
presidential retreat, Camp David in Maryland. The Hoovers paid for the land purchase, construction supplies, and furnishings. Marines supplied the construction labor as part of training exercises.

Hoover's wife, Lou Henry Hoover, led the design and construction effort at Rapidan Camp along with architect James Rippin and family friends. Upon its completion, the site included 13 buildings for staff and guests—all connected by a series of paths and bridges and designed to blend into the rustic mountain setting. The compound centered around the Brown House, which served as Hoover's onsite White House. Other buildings included a Town Hall for meetings, a Mess Hall for meals, a duty station for the Secret Service, and up-scale cabin housing for secretaries and other workers.

Rapidan Camp proved to be the ideal getaway for noted outdoorsman Hoover. As he said, "No other organized joy has values comparable to the outdoor experience." True to his ideals, Hoover spent his getaways there fishing and meeting informally with staff, international dignitaries, or constituents against the backdrop of the gorgeous Shenandoah site. The guest register included Charles and Anne Morrow Lindbergh,

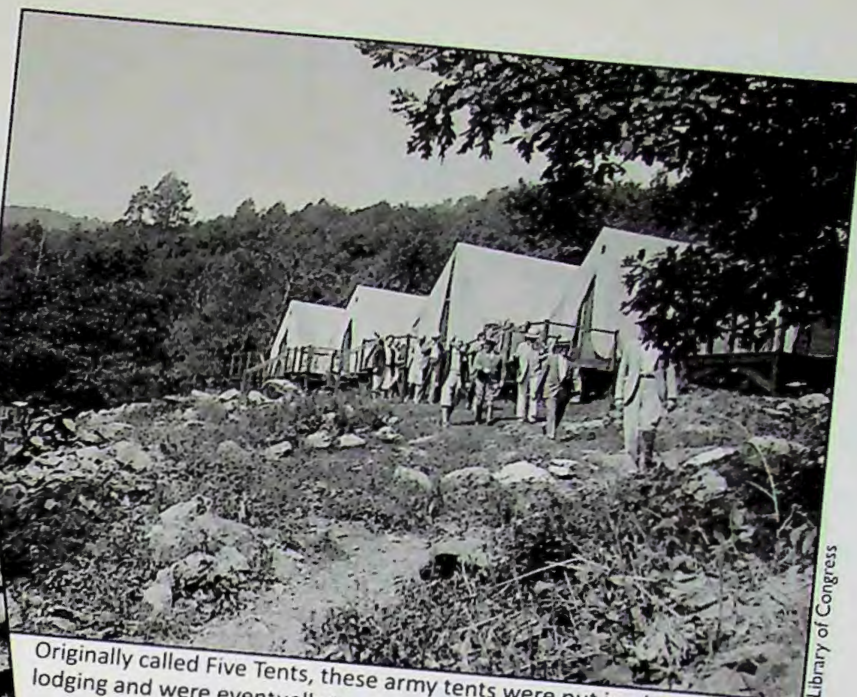
Fun Fact!

The Rapidan River was originally called the Anne River, after Queen Anne of England. During seasons with frequent flooding, the streamflow would quicken, and people would refer to it as the "Rapid Anne." This soon was shortened to the colloquial "Rapidan River."



Library of Congress

The Brown House was the center of the property, surrounded by connecting trails and bridges.



Library of Congress

Originally called Five Tents, these army tents were put in place for guest lodging and were eventually turned into wood-sided structures.

Mrs. Thomas Edison, the Edsel Fords, Henry Luce, and Mr. and Mrs. Theodore Roosevelt, Jr., along with British Prime Minister Ramsay MacDonald. Presidential business continued while Hoover visited the camp, with mail and newspapers delivered daily via airplane drop.

After his loss in the 1932 presidential election, Hoover donated Rapidan Camp to the Commonwealth of Virginia, intending for it to be used by future presidents. Three years later, the site officially became a part of Shenandoah National Park, falling under the jurisdiction of the National Park Service (NPS). President Franklin D. Roosevelt visited Rapidan Camp, but found it difficult to access, so he built Camp David in the Catoctin Mountain Park of Maryland.

The site was leased by the Boy Scouts of America from 1948 to 1958, after which the NPS tore down all structures except for three. The remaining buildings, which still stand today, are the Brown House, the Prime Minister (which housed MacDonald during his stay), and The Creel. Other manmade aspects, such as paths, bridges, and water features, are also still present.

In November 2023, the Quaker Run wildfire on

Shenandoah National Park and Rapidan WMA threatened the buildings of the Rapidan Camp, but federal, state, and local firefighters prioritized preserving the camp's structures. They set up sprinkler systems and protective firebreaks to help keep the site intact. "Firefighters ran hose and sprinklers throughout Rapidan Camp," said Madison Heiser of the NPS. "Sprinklers were fed by a pump system using a natural water source, and this gave firefighters access to plenty of water to protect Rapidan Camp. We're grateful for everyone's efforts to protect these historic structures."

People interested in visiting the site to get a better idea of its history will be pleased to find the Brown House's restoration and the Prime Minister's conversion to a museum. Both are open to tours with rangers, and both exteriors are as they were built back in 1929.

Beyond Hoover's influence and memory, the site and its surrounding areas remain a staple for anglers, hunters, and other outdoor enthusiasts alike. Why is that so?

Casting Where Hoover Cast

Rapidan Camp is nestled within thousands of acres of public

Did You Know?



The Mr. Rapidan Dry Fly, which imitates multiple early season mayflies that hatch in the spring, was developed by Harry Murray of Murray's Fly Shop in Edinburg, Virginia, who named it after the Rapidan. "It's successful not only with the Rapidan native brook trout, but with trout all over Virginia," said Alex McCrickard, DWR aquatic education coordinator.

land, surrounded not only by Shenandoah National Park, but also by the Virginia Department of Wildlife Resources' (DWR) Rapidan WMA. Rapidan WMA consists of 10,326 acres broken into eight separate tracts distributed along the east slope of the Blue Ridge Mountains in Madison and Greene counties. The Rapidan Tract of the WMA has the Rapidan River running through it and is close to Rapidan Camp.

The Rapidan, Conway, and South rivers are the area's major waterways and host an exceptional native trout fishery. Healthy populations of brook trout (*Salvelinus fontinalis*) abound in the WMA's rivers and streams, especially the Rapidan and Conway. The Conway River also contains numerous wild brown trout (*Salmo trutta*) to entice the adventurous angler. Small, swift-flowing headwater streams grade into larger, boulder-adorned rivers. Cascading white water interspersed with shallow and deep quiet pools filled with native trout provide a wonderful experience for the trout angler.

The effort that the Rapidan requires of anglers, according to Steve Reeser, DWR regional fisheries manager, only adds to the appeal. "It's not like you're standing in the Madison River and you've got 40 feet of line out there, taking these long casts like Brad Pitt in 'A River Runs Through It.' You're making short little casts and roll casts and hopping from rock to rock," he said.

DWR began acquiring the Rapidan WMA land in the mid-1960s. According to DWR District Wildlife Biologist Joseph C. Ferdinandsen, "a lot of that land was likely settled and mirrored a lot of the things you found inside of Shenandoah National Park." While the bulk of the land bought was either personally owned or the property of a timber company, the site has since been best known for its river and its population of native brook trout.

"It's the only native salmonid species there. We don't stock anything there on purpose," said Alex McCrickard, DWR aquatic education coordinator. The native brook trout has evolved since the Ice Age to live in high-altitude, cool, and clear waters. They require silt-free, oxygen-rich water, which

the Rapidan provides. The Rapidan's most notable residents, the native brook trout, make it quite popular with anglers. The Rapidan's brook trout average five to eight inches in length, however, some of the deeper holes in the middle to lower reaches of the river can hold some 12"+ brookies. "The Rapidan is popular because it has such a strong native brook trout population—it's a stronghold," McCrickard said. The Rapidan River and its tributaries within Shenandoah National Park and Rapidan WMA are managed as a catch-and-release fishery, prioritizing the continuation of the trout population while still allowing the public to enjoy what they have to offer.

A Diversity of Wildlife and Opportunity

The WMA, however, is not just for anglers—Rapidan offers an array of opportunities for hunters as well. A moderate but stable deer population exists on the WMA, as well as turkey, gray squirrel, and ruffed grouse populations. While visiting Rapidan Camp in Shenandoah National Park, be sure to keep an eye out for woodcock as well.

While the WMA has the most to offer for anglers and hunters, there's something there for everybody. The diversity in the Rapidan's flora and fauna provides opportunity for wildlife watchers and nature photographers alike. "Rapidan is a forest and mountain WMA," said Rapidan WMA Manager Jon Petri. "There is lots of [primitive] camping on the Rapidan and it's a great way to get away and enjoy nature. Hunting bear and deer in the fall is the most popular activity. The spring and summer are filled with campers and anglers fishing for brook trout." There is a network of hiking trails in the Rapidan Camp area of Shenandoah National Park.

Fishing the Rapidan with Alex McCrickard

DWR Aquatic Education Coordinator Alex McCrickard has plenty of pointers to make your experience on the Rapidan a good one. The Rapidan River allows single hook artificial only, so no bait, but you can use a spinning rod. A smaller rod will do the trick as the Rapidan isn't a large river. Specifically, a three-weight fly rod in the 7 1/2 foot range is perfect.

In the springtime, you can use a 9'4X leader, and bushy attractor dry flies do the trick. Some of Alex's favorites are a royal wulff, a yellow humpy, and an elk hair caddis. Sizes 14 and 16 are ideal in the spring to match the size of the insects hatching.

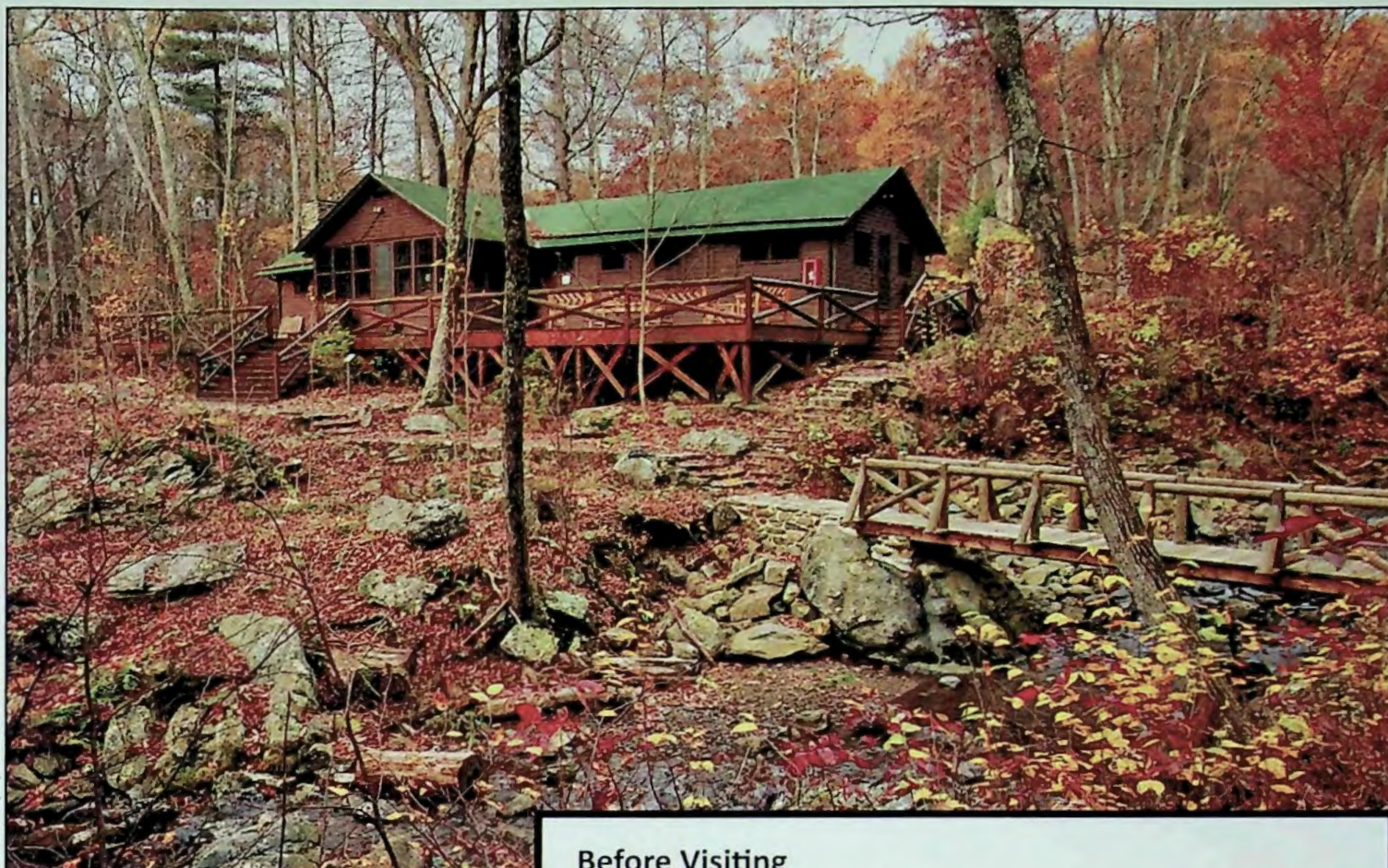
In the spring, native brook trout aren't incredibly picky, as their main concern is regaining weight lost in the winter



and continuing to grow. This means that as long as you're matching the general size and color of what they're eating, you're doing great. Being stealthy and having a proper presentation is paramount.

With decent river levels in the summer, native brook trout start to key in on terrestrial insects, largely Japanese beetles, ants, crickets, and inch worms. Specifically, small, chartreuse-colored inchworm flies work well, and cinnamon ants can be useful under overhanging tree limbs.

Alex McCrickard/DWR



Before Visiting

DWR District Wildlife Biologist Joseph Ferdinandsen recommends familiarizing yourself with the regulations of whatever activity you plan on engaging in before visiting Rapidan WMA or Shenandoah National Park; virginiawildlife.gov/wma/rapidan/ and nps.gov/shen/.

Make sure your vehicle is in good shape, with a spare tire and enough gas to last you between the site and the nearest station. Bring anything you might need, as the closest facilities are miles away. You're not too far off from other people, but you're nowhere near a convenience store.

As always, leave no trace and take only pictures!

It's no wonder that Hoover chose the Rapidan area as his getaway from the frantic, day-to-day rush of the White House. Ferdinandsen remarks that while the river is accessible, "it offers quite a bit of solitude." Removed from the hustle and bustle, the beauty of the Rapidan is found in its scenery and wildlife inhabitants.

"It's a very pretty area, especially in the spring," McCrickard said, highlighting the stairstep pools and hemlocks hanging over the river, noting that the native brook trout found in that water "look like a painting. They're just a beautiful little fish with pretty spots, patterns, and colors."

"You get a sense of exploration," Reeser said of the Rapidan area. "You get the white water tumbling over the rocks and getting aerated. It's so clear." What comes to mind when he hears the word "Rapidan" is "it sounds rapid, it sounds wild, it sounds pristine," he said—all of which aptly describe the landmark. 🐾



The Rapidan River in typical springtime flows.

As the Creative Content Intern in the summer of 2023, Serena Grant got to participate in all aspects of magazine production. Serena has returned to college and is looking forward to a career in writing and publishing.



Spring Turkeys Take Time

Story and photos by Mike Roberts

Decades of experience
and wisdom play a role
in a remarkable day
of spring turkey
season success.

The quest for long-spurred gobblers during the spring season is one of the most thrilling outdoor opportunities available to Virginia's corps of consumptive conservationists. It's even more so when you can share it with a friend or a family member. After 50-plus years of pursuing gobblers, I now understand what the element of patience meant to the fraternity of "old timers" who long roamed the hardwood ridges with wing-bone calls and long-barreled, Iver Johnson shotguns.

Dawn broke slowly across Campbell County on the morning of the 2023 spring gobbler season opener. Rather than the clear, balmy weather hoped for, overnight showers and bone-chilling temperatures had dampened the annual tradition for my daughter, Christin, and me. Even so, a pair of gobblers rattled the fog-shrouded hardwoods across the creek from where we sat waiting in suspense. Conditions were far from perfect, but preseason scouting and an extensive hike through the darkness had at least put us in position for a chance at success. I knew there was a big smile hidden behind Christin's mesh face mask!

Seemingly reluctant to fly down to the soggy forest floor, the gobblers continued serenading the creek bottom for nearly 45 minutes; my subtle tree calls only intensified their gobbling. Then, as was somewhat expected, a lone hen softly yelped in response farther down the steep ridge. When the boy's club finally sailed to the ground, it quickly became obvious they were headed in her direction.

From our well-concealed position just inside the bottom's brushy wood-line, we intently watched the field for the birds' anticipated appearance. Minutes later, the hen pitched down from the stand of mature oaks on the opposite cliff, but more than 200 yards or more downstream. As she picked her way across the marshy meadow, the gobblers finally strutted into view.

Rotating the triple-reeded diaphragm call in my mouth, I issued a raspy, passionate plea. One of the toms relaxed his strutting posture, turned his red-white-and-blue, periscoped head, and fired a single gobble in our direction, but his attention on us was brief. A short time later, both fully fanned suitors bird-dogged the hen across the lowland and, eventually, into the woods. Then, as if according to some primordial script, all turkey talk ceased.

Lessons Learned

Five decades earlier, as a young, native turkey hunter, I would have either ramped up the call's volume or, worse yet, made a mad dash in an attempt to circle the "henned-up" gobblers—a

decision often resulting in jumping one or more snorting whitetails and alerting every turkey on the farm. After an hour or two of frustration, I would usually pack up and head home. Nevertheless, all those years eventually taught me what not to do, and now was the time to rely on those lessons learned. Because Christin had successfully participated in this exercise countless times, she knew all too well what the next few hours held in store.

Well camouflaged, and lounging motionless in our low-profile chairs, we began observing and admiring other avians acting out their blackberry winter behavior. Across the way a pair of wood ducks navigated the creek's obstacle course of sycamore and poplar in search of a tree cavity suitable for a nest site. Twenty yards from where we sat, a mama woodcock and her three fledglings probed the carpet of sphagnum moss and wet, grassy margins for earthworms and insect larvae. Even amidst the cool, early morning temperatures, a male indigo bunting, dressed in stunning cobalt garb, landed on a bedewed black locust limb within inches of Christin's camouflaged cap and warmed our hearts with his sweet, territorial melody. From a stand of hardwoods behind us, a pileated woodpecker rapped his rapid-fire warning code to another wood hen doing the same a half-mile farther in the forest.

Although it was a couple of weeks too early for many of the area's wildflowers to



Indigo bunting sings in its territory.



Pink lady's slippers emerge from the forest floor.

expose their flashy blossoms, the sandy banks of the rippling stream were likely flecked with the yellows and namesake, narrow, green leaves of trout lilies, while hepatica were, no doubt, poking their lilac petals through the sheer cliff's thick blanket of leaf litter. I knew a colony of pink lady's slippers would soon adorn the forest floor of the open pine forest on the hill behind us. In the mountains farther west, those folks

hunting turkeys and morels would, in weeks to come, pause to admire the taller, yellow species, too.

Visions of lady's slippers and neotropical migrants were soon displaced by reminiscing about my miserable failure at spring gobbler hunting during the early 1970s. Without having a true mentor of the sport, learning was trial and error, and it leaned heavily on the error side.

The one turkey call I owned at the time was passed down to me upon the death of a cherished uncle who was my only family connection to big game hunting. Branch Hensley's Lynch Jet slate and peg was one he carried in the mountains of Bath County long before his hunting camp was covered with the waters of Lake Moomaw.

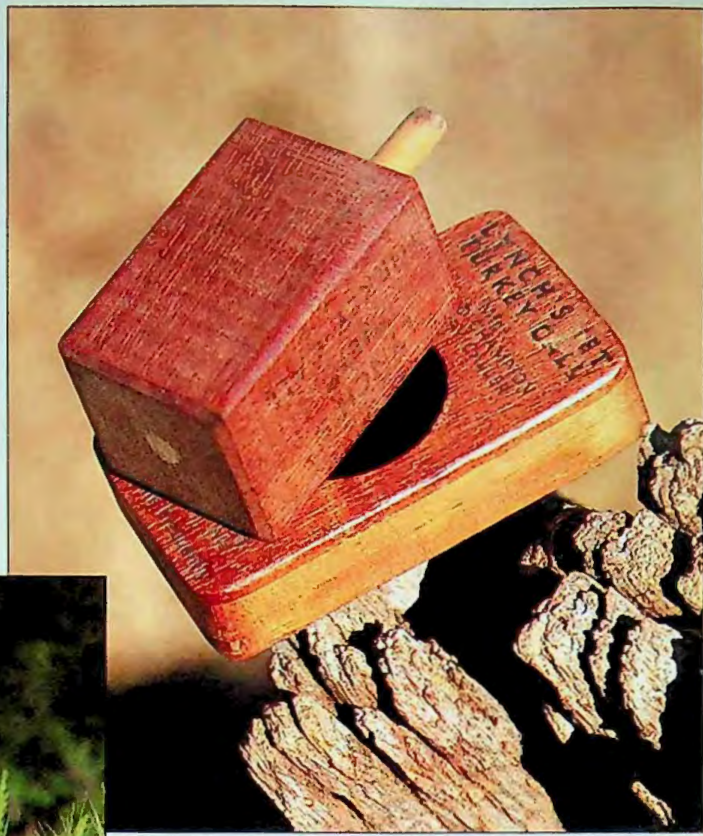
Somewhere along the way, an old-schooler declared the only way to lure a gobbler into range was duplicating the hen turkey's distinct "three-note love call." I took the process a step further by purchasing a bottle of Tink's turkey scent. Yes, you read it right, "turkey scent!" I was ignorant to the fact that most birds lack the large olfactory bulb required for processing odors, excluding the turkey vulture, of course.

Armed with a wealth of second-hand hunting knowledge, I headed out to the woods one warm, spring morning in 1970. Resting my back against a huge oak, I squirted some of the brown, foul-smelling liquid on several saplings, scratched out three, soft notes on that little slate call, set it down beside me, and waited nearly an hour for a gobbler that never appeared. At noon I drove back home from the George Washington National Forest greatly disappointed. To put things in perspective, for years I failed to notch a single turkey tag.

Patience Pays Off

Over the following decades, the likes of Jim Crumley, Jim Clay, Kit Schaffer, and Leonard Lee Rue III, played key roles in improving my odds of success hunting wild turkeys. Yet, it was a simple, little fellow who worked at a gas station in Naruna, Virginia, who made the biggest difference.

During the weeks leading up to spring gobbler season, whenever I stopped by for fuel, Paul Irby would be practicing with his diaphragm mouth call. His were the most realistic yelps I had ever heard—even better than those of the real McCoy. He's now



Above: Cherished family heirlooms like this slate turkey call give turkey hunting more meaning. Left: A hen turkey's distinct call can lure gobblers closer.



Gobblers drag their wings, strut, and gobble trying to impress nearby hens.

long since deceased, but Mr. Irby eventually taught me how to properly use the call and even took me hunting several times. Though it required years to master them, Jim Clay's Perfection mouth calls became my "go-to" means of fooling gobblers. And there was no "three-note" call of a lovesick hen!

Bringing myself back into the present, I whispered to Christin that it was about time for the pair of gobblers to start searching for another receptive hen. Seconds after the words left my mouth, a single gobble echoed from the far stretches of the bottom. Minutes later, both birds reappeared, but then marched across the field toward the creek and up to the top of the cliff.

Once back at the morning's staging area, the toms started gobbling in earnest. Although my yelps drew an instant reply, the birds seemed bent on remaining in their safety zone. After about 30 minutes I began raking my hands in the leaves to replicate a feeding hen. Almost immediately, both longbeards began angling down the slope directly toward us. When they flew across the stream and were within 100 yards, and with her shotgun already shouldered and pointed their way, Christin whispered, "Dad, raise your gun. Let's get 'em both!"

Having thrown all caution to the wind, the gobblers were soon at 30 yards. Just as I whispered, "Take your time and make a good shot," my daughter pulled the trigger. Seconds

after the gun's roar ripped the quietude, and with her bird flopping on the ground, the second, confused tom flew straight up, but landed only a few yards out, which allowed me an opportunity to settle the scope's crosshairs on his head. It was a rare, high-fiving, double in the turkey woods and a fantastic way to kick off our season.

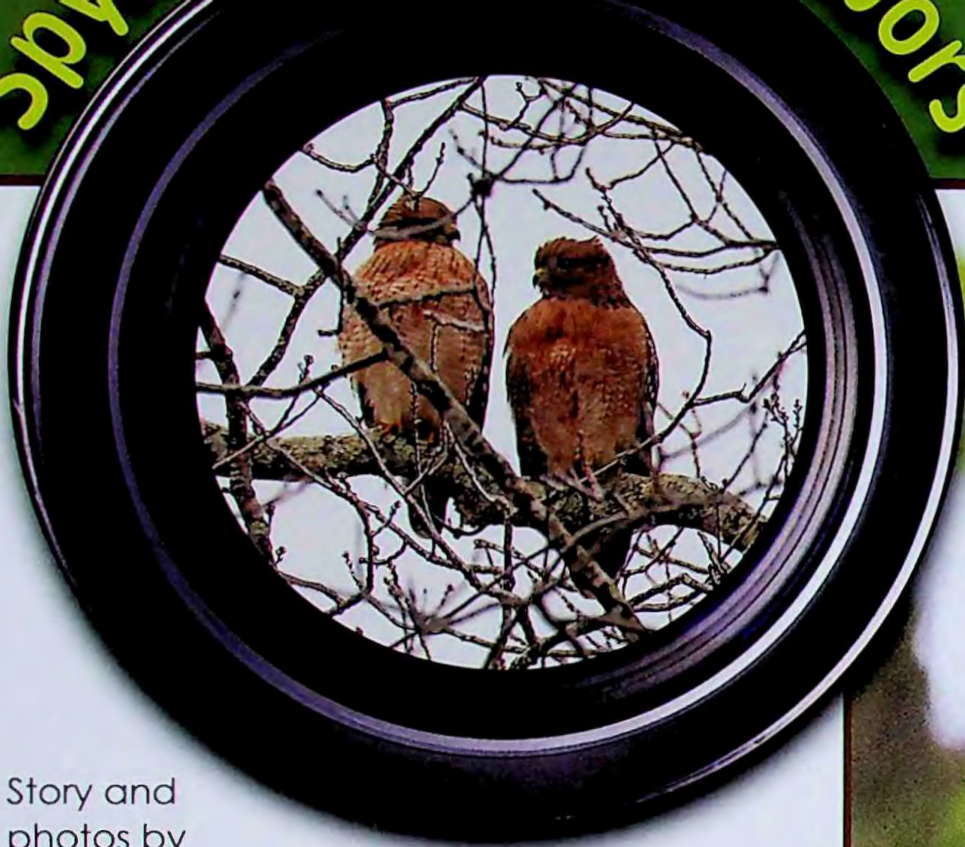
These days I have retired my box and slate calls to a curio cabinet and depend solely on the diaphragm call that my unlikely instructor taught me to use more than four decades earlier. One other essential piece of equipment is a low-profile turkey chair, which keeps my posterior off the damp ground and allows me to sit comfortably for hours—especially between 10:00 a.m. and noon.

Whenever asked about turkey hunting advice, my suggestions include the familiarization of wild turkey behavior, ample preseason scouting, patterning your shotgun, trusting your camouflage clothing, hunting safely, absorbing the beauty of nature and, when you run out of options, press the patience button. Success in the spring turkey woods is merely a matter of time! 🦃

A lifelong naturalist and wildlife photographer, Mike Roberts enjoys sharing his knowledge with others. You can contact him at: return2nature@aol.com.



Author Mike Roberts, *left*, and his daughter, Christin, *right*, proudly show off their hard-earned gobblers harvested on the opening of spring gobbler season.



Story and
photos by
Stan Kaslusky

For the past few years, I have had the pleasure of following the nesting lives of red-shouldered hawk families here at my home at Lake Monticello, Virginia. Our community is a suburban lake community nestled in a rural county and a great spot for birding. Red-shouldered hawks (*Buteo lineatus*) are common in our area due to the abundance of mature forest, which is their preferred habitat.

They are part of the Buteo category of raptors, which are comprised of larger, soaring hawks with broad wingspans. Red-shouldered hawks can be identified by alternating black and white bands on their wings and tail and a touch of red on their shoulders, along with extensive reddish barring on their breast and belly. They are a medium-sized Buteo with a wingspan of around three feet. The female and male look alike, with the female being slightly larger in build. They are a territorial species, with pairs often chasing out rivals from their domain.

Our story begins when I managed to catch a photo of a male and female red-shouldered hawk together at the beginning of the season. Our hawks will stay together for the season—mating, nest building, and raising their young. Nests are often used year after



A breeding pair of red-shouldered hawks provided this photographer with an intimate look into their life cycle.





The adults built the nest securely in the fork of a tree.

year. Mating occurs in late winter to early spring. After mating, their nest building begins.

Red-shouldered hawks build their nests in the fork of a strong tree in wooded lots, sometimes close to houses. Our nest this year, on a neighbor's lot, was within view of my telephoto lens, making it an ideal location to follow the family's progress. I managed to find a perfect location on the driveway enabling me to stay far away in my car, so as not to disturb them. As they build their nests, red-shouldered hawks will add a lining of greenery, possibly to tell other species that this nest is occupied. As testimony to the strength of this nest, we experienced a quick passing storm with 90 mph winds, shaking and toppling trees. Our hawks' structure survived the storm due to their superior engineering skills.

Hawks of this species usually raise chicks from two to four. The female will leave the nest for short periods to gather sticks to fortify the nest. The male will bring food to the female and share in guarding the nest while she is away. Building a nest close to housing brings with it problems for these territorial birds. While doing yard work, our neighbors often experienced the hawks making swooping dives towards them as they sensed a threat.

After a period of 30-40 days, the eggs begin to hatch. Then

the real activity begins. The female and male stay busy going on the search for food and shoring up the nest. This year, I was fortunate to observe one of the parents hunting on my property. The hawk perched on a low branch of a tree and swooped down, gliding across the forest floor looking for prey.

Red-shouldered hawks feed on reptiles, amphibians, small birds, and small mammals. The hunters will perch on a limb and drop down on prey in the leaf litter below. Red-shouldered hawks are proficient hunters of young squirrels.

Chicks begin as fuzzy little creatures with white down and demanding, open mouths. As they grow, they will shed their down and replace it with the feathers that will enable them to fledge.

Chicks will begin to leave the nest about 42-49 days after hatching.

They will stay close by as their parents teach them how to hunt for their own food. In my observations, I could see the young hawks sitting in nearby branches looking to the parents for an easy meal. When the parents sense the chicks are ready, they will stop feeding the young hawks so that they can go off and make it on their own.



An adult returns to the nest with a meal of frog legs.



The three juvenile hawks (shown to the right of an adult) have begun to lose their down and grow flight feathers.



Now fledglings, the young are ready to leave the nest.

I've read where some adult raptors will stick spike-like branches in the nest to discourage the young from returning to the nest. I tried this myself with my nesting college-age children. Effectively playing classical music all the time at home forced the graduating seniors to fledge, find employment, and not return to the nest.

Unfortunately, not all stories have a happy ending. One year's family abandoned the nest in mid-May after the chicks disappeared one night. I suspect that the chicks may have been taken by a predator such as a snake, a raccoon, or possibly an owl. The adults seemed to begin to build another nest in an adjacent location almost immediately. The instinct to reproduce is strong.

Following these hawks over the past several years has been a true pleasure. A weekly observation of the nest recorded significant progress with each visit and morning sunlight provided for successful photography. 🦅

Special thanks to my neighbor for allowing me to photograph this journey on their property.

After a 40-year career with the YMCA, Stan Kaslusky, together with his wife Julie, retired to Lake Monticello near Charlottesville to pursue his hobbies of photography and birding. The beautiful Virginia countryside has made joy an important part of everyday life.





Explore the Wild at the

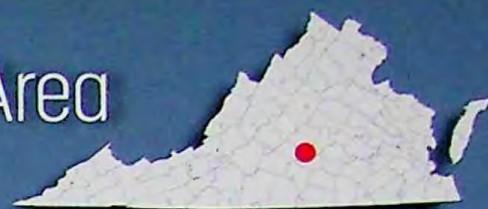


The Virginia Department of Wildlife Resources maintains 78 Wildlife Management Areas (WMA) and Wildlife Conservation sites (WCS), with nearly 250,000 acres of land managed for a diversity of wildlife habitats and open to the public for wildlife-related recreational opportunities. For more information: virginiawildlife.gov/wma.

Photo by Meghan Marchetti/DWR

Briery Creek Wildlife Management Area

✓ Hunting ✓ Trapping ✓ Primitive Camping ✓ Hiking ✓ Birding
✓ Horseback Riding ✓ Warmwater fishing ✓ Boat Ramp(s)



Briery Creek WMA's 845-acre lake offers excellent fishing opportunities, but its diverse woodlands also provide great hunting opportunities. The 3,164 acres in Prince Edward County support an excellent turkey population, with deer and squirrels as well. Waterfowl hunting, furbearer trapping, and wildlife viewing are also popular. Briery Creek Lake is a popular place to fish and has become Virginia's premier trophy largemouth bass lake, with quality fisheries for bluegill, redear sunfish, and crappie also. Facilities include two concrete boat ramps and parking areas, a gravel boat ramp, and an accessible fishing pier.

Clean Water Has Shaped Jeff Kelble's Life

*The angler and conservationist
has taken a stand for the river that's been central to his life.*

By Bruce Ingram



Courtesy of Alan Lehman/Potomac Riverkeeper Network

Jeff Kelble has built his life and multiple careers around the Shenandoah River.

Sometimes, seemingly insignificant events from our youth guide us to certain paths as adults. For Jeff Kelble, of Boyce, Virginia, the incident took place when his father innocently set out to drain a remnant natural wetland on the family's property in an attempt to reduce standing water and mosquito problems. Kelble, who spent his formative years playing in this wetland and the surrounding woods, proclaimed to his father that he would "turn him in to the authorities" if he continued.

Seeing how serious Kelble was about protecting a wetland,

his father stopped the project. Not only did the wildlife and ecology of the area surely benefit, but Kelble's passion for advocacy was set in motion. The episode helped inspire the youngster's passion for clean water and fishing. Kelble has shaped his adult life around that desire to improve waterways.

As a young adult, Kelble looked to the Shenandoah River and its smallmouth bass population as a touchstone for his career. He and his wife Erika launched a guide business and bed and breakfast some 25 years ago in the Shenandoah Valley. Things went well for seven years until the infamous Shenandoah River fish kills slammed the watershed in 2005.

"I felt powerless when the fish kills started and had this sinking feeling that I needed to be involved somehow in fixing the problem," Jeff recalled. "I told my angler clients that I wouldn't charge for taking them fishing, but I wanted them to go out with me to the river and document how poor the fishing was and how ill the smallmouth bass and sunfish were. Then I set out to make sure the public and state agencies knew about the extent of the problem."

The Virginia Department of Wildlife Resources (DWR) later reported that some 80 percent of the smallmouth population in the watershed had perished. From Jeff and his clients'

experiences, few bass over 11 inches survived in the upper reaches of the river.

"The exact cause of the fish kills and fish health events that occurred throughout the Shenandoah River watershed in the mid-2000s was never determined," said DWR Regional Fisheries Manager Steve Reeser. "Multiple stressors affecting the fish were identified through rigorous investigations by state and federal natural resource agencies, academic institutions,

and non-governmental organizations. These multiple stressors and the spatial and temporal differences in the fish health events themselves, made identifying a single cause virtually impossible."

Jeff's advocacy came to the attention of Ed Merrifield, then the Potomac Riverkeeper executive director. And in October of 2005, Merrifield worked with Jeff to create the first Shenandoah Riverkeeper position for Jeff to fill.

"I felt the Shenandoah had provided Erika and me a living for seven years, so I believed I owed a debt to the river, so I set

out to spend seven years helping heal it," Jeff explained about his decision to transition into the riverkeeper role.

"Jeff was a passionate advocate for improving the health of the Shenandoah River," said Reeser of Jeff's involvement in investigating the fish kills. "He was a valuable member of the Fish Kill Task Force and was the one who often pressed the group to investigate all potential leads, even when those areas or subjects were not always popular with certain groups. NGOs like the Riverkeepers were extremely helpful in bringing attention to the poor health of the Shenandoah River and attracting funds to be able to research the problem."

"Citizens in most countries don't enjoy the same level of access to public land and water, and the privilege of enjoying it freely," said Kelble. "So much of the world's freshwater streams have been privatized. This gift of public waters is something that we should cherish as Americans. Most of Europe and the world don't have that privilege."

Successful smallmouth spawns helped the

Shenandoah population rebound, and by 2010 the small-mouth fishery was recovering nicely.

Giving the River a Voice

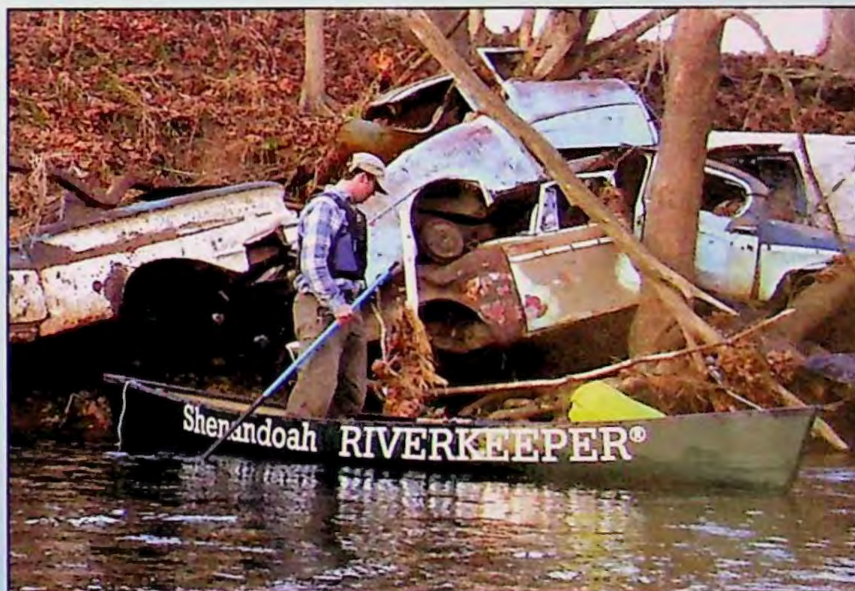
Jeff's seven-year plan turned into nearly twice that, and after a decade as Shenandoah Riverkeeper, he became the president of the Potomac Riverkeeper Network in 2014 when Merrifield retired. Jeff holds a Bachelor of Science in Human Factors Engineering from Tufts University in Massachusetts, which he put to good use motivating others to join his efforts. He enlisted lawyers, conservationists, volunteers, landowners, and many others to advocate for the watershed's healing.

Some of Jeff's accomplishments while doing that work include:

- Served on the Virginia Fish Kill Task force, working for nearly a decade with scientists from the U.S. Geological Survey, universities, and state agencies to discover information about fish health, fish illness, water quality, and human effects on the ecology of the river.
- Worked on Virginia's Regulatory Advisory Committee to close the "end-user" loophole under which millions of tons of poultry litter waste had been applied as fertilizer in the Shenandoah and James river valleys. Closing that loophole compelled the use of the litter to be applied under regulations aimed at reducing the impact on water quality and fish health.
- Discovered and then revealed the presence of toxic blue green algae blooms in the Shenandoah system to the press, Virginia's Department of Environmental Quality, and the Environmental Protection Agency (EPA). The algae exist primarily due to generations of over-fertilization of the land in the Shenandoah Valley



Smallmouth bass kills on the Shenandoah inspired Jeff Kelble to begin advocating for the health of the river.



For more than a decade, Jeff Kelble devoted himself to advocating for a cleaner Shenandoah River.

- and of a history of outdated waste treatment systems.
- Filed the first three private citizen lawsuits in Virginia history against development companies that had flagrantly violated their legal requirements to control sediment pollution from construction sites.
- Created and launched a program with the University of Virginia's (UVA) Environmental Law and Community Engagement Clinic to audit the construction of storm water programs for all seven Shenandoah Valley counties. This led to major reforms in enforcement and staffing.
- Was invited to work with Virginia Department of Environmental Quality (DEQ) on the regulatory committee to reform construction storm water regulations after his lawsuits and UVA audit revealed systemic problems.
- Filed multiple legal cases against state government, federal government, and corporations failing to meet pollution control requirements.

Adventures with Jeff

Every time Jeff takes to a boat or the river's banks, the excursion turns out to be about much more than fishing or whatever outdoor activity he set out to do. For example, during one trip where I joined him, we had to stop at a small creek that's a tributary of the Middle River. The spring creek had been channelized and stripped of vegetation, and cattle over the decades had denuded the banks. Jeff told me he worked with the landowner to remedy all those issues. One year after cows were removed from the tributary, the watercress enjoyed explosive growth, as did cress bugs.



Jeff Kelble is always looking for signs of a river's health, such as cress bugs in a tributary of the Middle River.



One of the battles Jeff Kelble fought was to expose blue-green algae on the Shenandoah River.

Courtesy of Alan Lehman/Potomac Riverkeeper Network

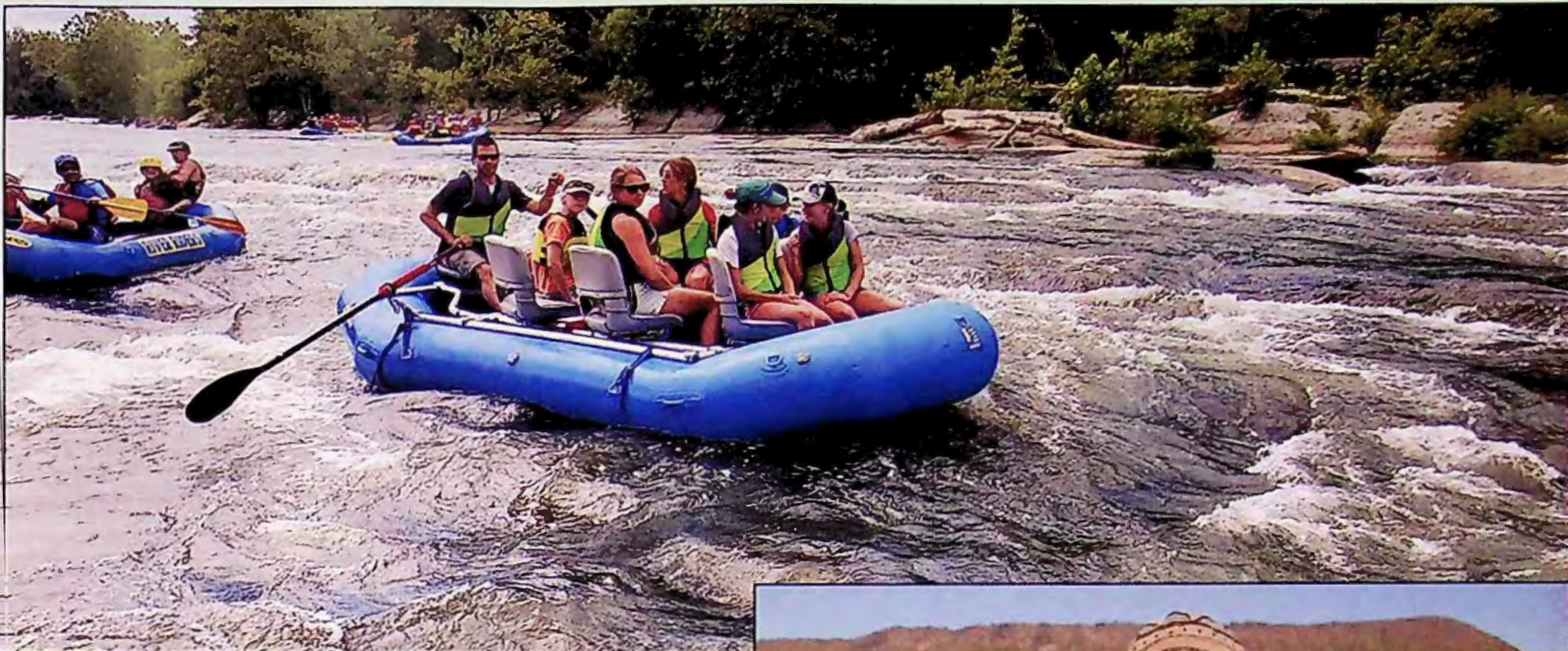
"Cress bugs show stream health, and are a great food source for trout," Jeff explained.

Front Royal's Herschel Finch, who wrote a long-running conservation column for the Potomac River Smallmouth Club, said the anecdote was typical. "Jeff is the ultimate conservationist," he said. "He practically single-handedly exposed to the general public that the Shenandoah watershed had issues with

run-off and pollution. Now, people pay a lot more attention to the watershed's health. But just as impressive is the fact that after he exposed the problems, he went to work to try to solve them."

On a trip down the South Fork with Finch and Jeff, as usual, the adventure expanded, incorporating all of Jeff's roles. We made one stop because the conservationist wanted to gauge the growth of water stargrass, which serves as a nursery for the river's gamefish. Another pause in the action took place because the advocate wanted to check on the reproductive efforts of a great blue heron rookery. Oh, and in between those informational sojourns, the fishing guide landed a near 20-inch smallmouth.

Jeff, now president emeritus of the Potomac Riverkeeper Network, has started yet another era, returning to his roots on the river. In 2019, Jeff and Erika



Courtesy of Alan Lehman/Potomac Riverkeeper Network

With the founding of his latest venture of conservation and environmental themed adventures, Jeff Kelble has returned to his roots but has not left the rivers behind.

**"Jeff is the
ultimate
conservationist."
- Herschel Finch**



©Bruce Ingram

Jeff Kelble (left) still enjoys a day on the water with friends like Herschel Finch (right).

founded Ashby Gap Adventures, which offers the standard hunting, fishing, and paddling activities but strives to be so much more.

Jeff adds that besides the aforementioned undertakings, Ashby Gap provides camping, birding, wildlife watching, scenic river tours, and conservation and environmental themed adventures. He even has a staff member, Clay Morris of Berryville, who conducts wild edible walks.

"Our major focus is to be the catalyst for people who don't have the experience, knowledge, or equipment to enjoy the outdoors," Erika said. "If we can just get these people outside, the joys of nature will do the rest."

On a June morning last year, Morris chaperoned Jeff, my wife Elaine, and me along a stretch of the main stem of the Shenandoah. We learned how to pickle black walnuts, boil cattail stems, prepare elderberry flowers, ferment summer grape leaves, and turn white pine needles into tea among other culinary delights. Just like every other outdoor activity I've ever been on with Jeff, it was an illuminating experience. 🌿

Bruce Ingram has written books on the James, New, Potomac, Shenandoah, and Rappahannock rivers, plus Living the Locavore Lifestyle, four young adult fiction novels, and Horrible Holidays, a children's picture book.

Be Aware of Alpha-gal Syndrome



By Emily Strother

All images by Shutterstock

It was during the spring of 2019 when I harvested my first longbeard wild turkey. After hunting them for three seasons, I was ecstatic that my ceaseless effort and many walking miles finally paid off (with the help of my now-husband). It was a rewarding and memorable morning.

But with any reward comes risk. At the time, I was becoming more aware of the possibility of contracting an allergy to red meat from a tick bite. This alarmed me, and I knew I was at risk of contracting the allergy just from frequenting the environment where both ticks and turkeys are found. While I tried to avoid this potential drastic health upheaval that season, I unfortunately found myself needing a diet change shortly thereafter.

Anyone who spends time in the outdoors for any activity that might put them into contact with ticks should know more about the possible consequences of a tick bite, which range from a simple infection at the bite site to Lyme disease and a more recently identified reaction.

Alpha-gal Syndrome

That spring, I developed an allergy to red meat (mammalian meat) known as alpha-gal syndrome (AGS)—or allergy—that has been linked to tick and chigger bites.

Alpha-galactose (galactose- α -1,3-galactose) is a carbohydrate that is present in all mammals except some primates, such as apes and humans. This carbohydrate is present in mammal meat such as beef and pork, but it's also present in wild game, including venison, elk, bear, rabbit, squirrel, and other game. Alpha-gal is not found in birds or fish. A tick bite can transfer alpha-gal molecules to the person's blood, possibly triggering AGS.

Dr. Jonathan Mozena, a board-certified allergist and immunologist, said that AGS occurs when an individual develops an allergy to the alpha-gal carbohydrate present in mammal meat. Most other allergies—such as a peanut allergy—are an allergy to a protein found in a particular food.

“AGS is unique because it's an allergy to a carbohydrate and not a protein,” said Mozena. “If a person [with AGS] is allergic to beef, that same individual will typically react to pork, lamb, bear, deer, and so forth.”

What is also unique about the alpha-gal allergy is that it entails a delayed allergic reaction. With normal allergies, reactions occur within minutes of ingestion. With the alpha-gal allergy, reactions usually begin to occur two to eight hours after consumption of red meat. I experienced my first allergic reaction nearly eight hours after eating a hamburger for lunch that same spring I harvested my first turkey.

While alpha-gal allergy differs from other food allergies in some respects, the presenting symptoms of an allergic reaction are similar. AGS presents the same reactions as other food allergies, including hives, itching, a drop in blood pressure that can cause dizziness, chest tightness, abdominal cramping, diarrhea, vomiting, and in some severe cases, anaphylactic shock and uterine cramping. The symptoms of my first reaction involved hives and a severe stomachache that sent me to the restroom. I took an antihistamine medication and sipped on hot ginger tea (to soothe my stomach), thinking that maybe I had just eaten spoiled meat at lunch that day. It wasn't until later in the summer, after experiencing these symptoms numerous times, that I realized I was experiencing allergic reactions to red meat. While most people with alpha-gal allergy react to red meat alone, in rare cases, some people with alpha-gal

Before you head outdoors this spring and summer,
learn more about this unusual
tick-borne syndrome.





The most obvious preventative strategy to avoid the potential of contracting alpha-gal allergy is to avoid tick bites



allergy can react to other mammalian byproducts, such as gelatin, lard, or beef broth, to name a few. "A vast majority [of patients] can have dairy; it's only a small percentage that is sensitive," Mozena said.

Another unique (and perhaps reassuring) characteristic of alpha-gal allergy is that it is usually expected to recede over time, meaning those who have the allergy may be able to consume red meat again eventually.

"The good news is that the majority of people will outgrow it," said Mozena. "But they are still at risk—I've seen people outgrow it and then get re-sensitized." It is suspected that re-sensitization is caused by re-exposure to a tick that can cause alpha-gal syndrome.

The AGS Vector in Virginia

While there are other ticks worldwide known for causing alpha-gal syndrome (including the possibility of chiggers), the most prominent vector currently known to induce alpha-gal syndrome in Virginia is the lone star tick (*Amblyomma americanum*). The lone star tick is predominantly found in the southeastern, eastern, and south-central regions of the United States, where temperatures are warmer, but it has also been found in other regions and is expanding its range to the north.

"[Lone star ticks] are shifting their distribution, and we are starting to see them at more northerly latitudes, as well as at higher elevations (over 1,600 feet)," said Dr. Gillian Eastwood, vector-borne disease ecologist leading the Eastwood Lab at Virginia Tech. She said that there are numerous potential factors contributing to this shift in distribution, including climate change, changes in land use, deer movement, or migrations of some other species, generally.

Though the Eastwood Lab doesn't conduct tick and tick-pathogen research surveys across the entire state of Virginia, Eastwood said that among their research on tick-borne viruses, they have found that lone star ticks are less prevalent in the mountains compared to black-legged ticks (*Ixodes scapularis*). Lone star ticks are common in the Piedmont and Coastal Plain regions of Virginia.

Prevention

While it poses a challenge for the outdoor enthusiast, the most obvious preventative strategy to avoid the potential of contracting alpha-gal allergy is to avoid tick bites. As someone who enjoys getting outdoors, I've had to take extra precautions before spending time outside, and there's no denying that it requires additional time and resources. Gardening, fly fishing, and spring turkey hunting are among my favorite outdoor hobbies, and it's hard to stay away from ticks in the environments those activities entail.

Eastwood said it's first important to understand when and where the ticks are primarily located outdoors and to protect yourself or avoid those areas to reduce potential exposure to a tick looking for a host.

"Edge habitat—i.e., the edge of a trail or woods—is habitat to avoid," said Eastwood. Lone star ticks, which are mainly



Spraying insect repellent can help reduce the chance of a tick bite.

active between March and October (though many ticks are active throughout the winter), are also found in grassy or wooded areas in the underbrush.

Tucking your pants legs into your socks or boots, wearing permethrin-treated clothing, and checking yourself well after returning from the outdoors can also be effective prevention strategies. Eastwood also recommends showering immediately.

"Often, ticks crawl around first before attaching, so it's recommended to shower or check yourself as soon as possible

upon returning from the outdoors,” Eastwood said. This practice can potentially reduce the chance of a tick being attached for a longer period or could prevent a tick from attaching at all.

When ticks attach to a host, they have a cement-like substance that binds the tick around its mouthpiece, according to Eastwood (hence, the firmer tug it usually takes to detach a tick). It's important to properly remove the tick's mouthpart in addition to its body, as this saliva is where disease transmission can take place. Eastwood advises getting as close to the skin's surface as possible with a pair of tweezers, pinching the tick, and pulling back without twisting or jerking the tick, as this can leave the mouthparts in the skin.

Looking Forward

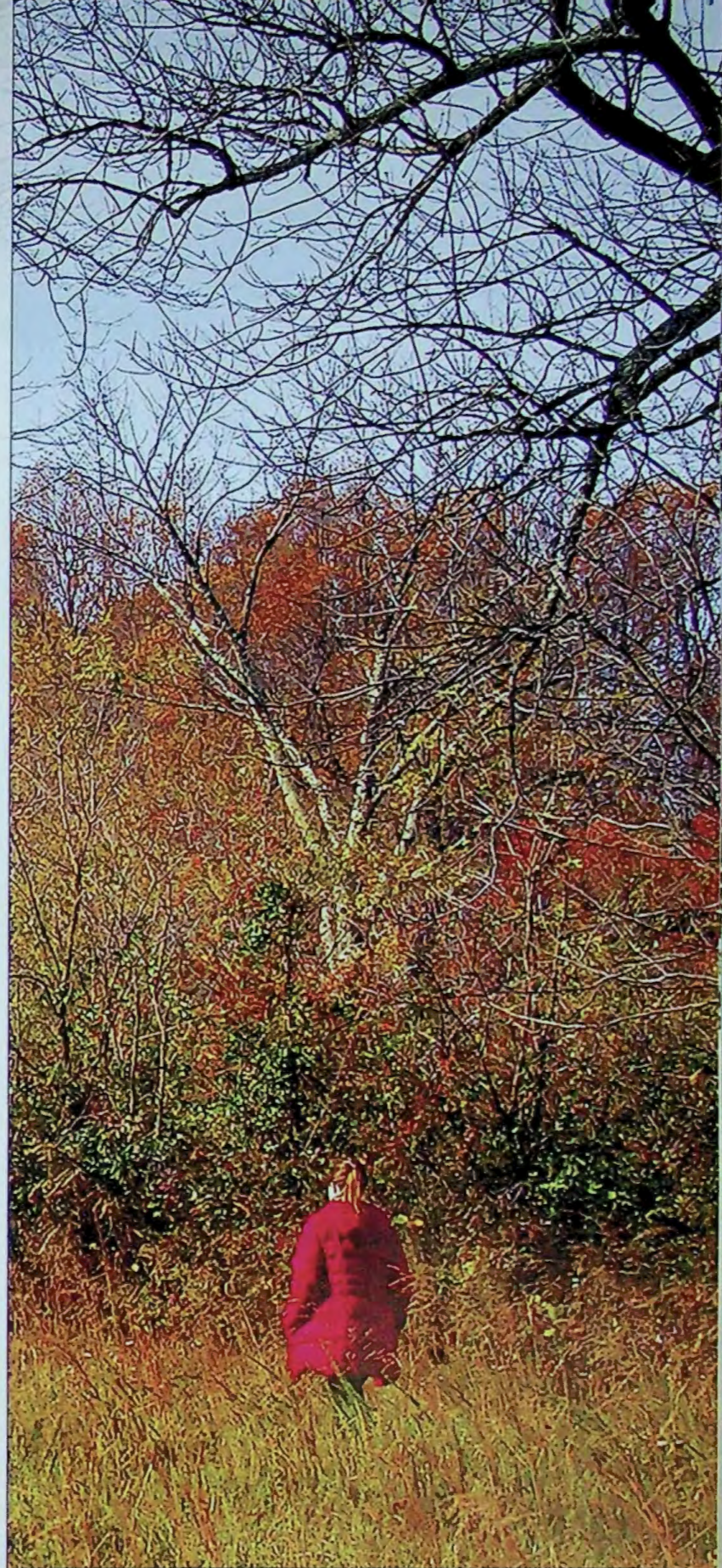
Many things are still unclear about alpha-gal allergy, but research is ongoing. While those who spend a lot of time outdoors are more prone to developing the allergy because of their frequent exposure to ticks, not everyone bitten by a tick will contract the allergy. The reason why some people develop the allergy and others don't is still unclear. It was also presumed that ticks feed on the blood of other mammals, such as deer, and would transfer the alpha-gal molecule once it latched on to a human. However, there's new speculation that a tick itself can produce alpha-gal, but this theory isn't fully developed yet either.

“We have some pieces to the puzzle, but a lot of pieces are still missing,” said Mozena.

Hopefully, the missing pieces will begin to fall into place soon on this emerging phenomenon. Alpha-gal has changed my life as well as the lives of many others. For me, my hunting habits have changed, dining out is more anxiety-ridden, an annual epinephrine injector prescription has become a major necessary expense, and alpha-gal allergy has impacted my family's eating habits almost as much as mine.

While there's always a risk with any activity we love to pursue, and sometimes things happen despite our best efforts, I encourage you to be vigilant in prevention strategies and become aware of the characteristics of an AGS allergic reaction. Being better prepared and aware is key to prevention or detection. 🍂

Emily Strother is a freelance writer who calls Virginia home. She enjoys spending time outdoors with her husband, Hunter, especially when they're gardening, hunting turkeys, or fly fishing.



Keep in mind what type of habitat tends to host ticks, such as edge habitat, and avoid spending much time there.

Highlights from the 2023 Virginia Wildlife Grant Program

Since 2014, the Virginia Department of Wildlife Resources (DWR), in partnership with the Wildlife Foundation of Virginia (WV), has used money collected from the sale of DWR merchandise and other sources to fund the Virginia Wildlife Grant Program. The goal of the grant program is to connect Virginia's diverse communities and youth with the outdoors. The program awards grants to nonprofit organizations, schools, and government agencies with missions that align with the goal of helping underserved groups enjoy outdoor activities. The outdoors are better together, and the grant program aims to include everyone.

2023 Stats

Participants:

2,481

Participant Hours:

13,688

Average percentage
of 1st time participation
in the activity:

68%

Volunteers:

200

Primary Program Focus Areas for 2023



ARCHERY

\$30,500

in funding for
3 programs



BOATING/PADDLING

\$24,000

in funding for
2 programs



FISHING

\$39,400

in funding for
3 programs



**HUNTING &
SHOOTING SPORTS**

\$35,500

in funding for
3 programs



WILDLIFE VIEWING

\$38,250

in funding for
3 programs



“

This grant elevated the program to heights we couldn't have dreamed of last year. Our program was able to nearly double in size thanks to the equipment we were able to purchase, as this allowed us to accept participants who did not have the means to obtain their own. We have been able to build up a core community around archery on campus, with many people coming into it brand new who have grown to be dedicated to the sport.”

- Club Archery at George Mason, Primary Grant
Activity: Archery



“ This has been such an engaging experience for our students! We learned ecology, entomology, fly fishing, and fly casting, and we have been raising brook trout! Many students developed an interest in fly fishing during the ‘Flyology’ class and the project. Several students had never been fishing, let alone fly fishing. Several students purchased their own fly-tying kits and have been tying flies at home! The students also learned valuable conservation and environmental science by raising native brook trout. The students from the smaller ‘Flyology’ class taught two lessons about brook trout and their habitat to the larger middle school group. As a teacher, seeing them effectively teach this material to their peers was the part I was most proud of. The hands-on experience of raising trout has been an engaging and meaningful learning experience.”

- Community Lab School, Primary Grant Activity: Fishing

“ We foresee making this an ongoing program as one of our One Day Camps we provide to our participants. Being that the equipment has been purchased through the grant, we can continue to provide this experience in the future.”

- Camp 25 Inc, Primary Grant Activity: Wildlife Viewing



“ We cannot thank DWR enough for making this grant possible for us. Having our own stand-up paddleboards is truly a logistical game changer, because we have a way to get kids on the water that doesn’t require a boat trailer. This is also by far one of the most popular activities that we offer; kids LOVE the stand-up paddleboard and it’s the perfect way to get kids introduced to paddle sports in a fun, accessible, and cool way. We hope that we can continue to work with DWR to get girls outside, appreciative of nature, and feeling confident. Thank you so much!”

- The Wild Way, Primary Grant Activity: Boating/Paddling



WILDLIFE
FOUNDATION OF VIRGINIA

the **OUTDOORS** *are*
Better **TOGETHER**

Funds contributed through the purchase of merchandise and round-up sales of licenses directly contribute to the funding of our grant program. If you are interested in connecting people to the outdoors: dwr.virginia.gov/give



How Did Indigenous Peoples Catch Fish?



Virginia's plentiful freshwater fish populations have fed residents for thousands of years, with ingenious methods being used to capture them.

by Glenda C. Booth

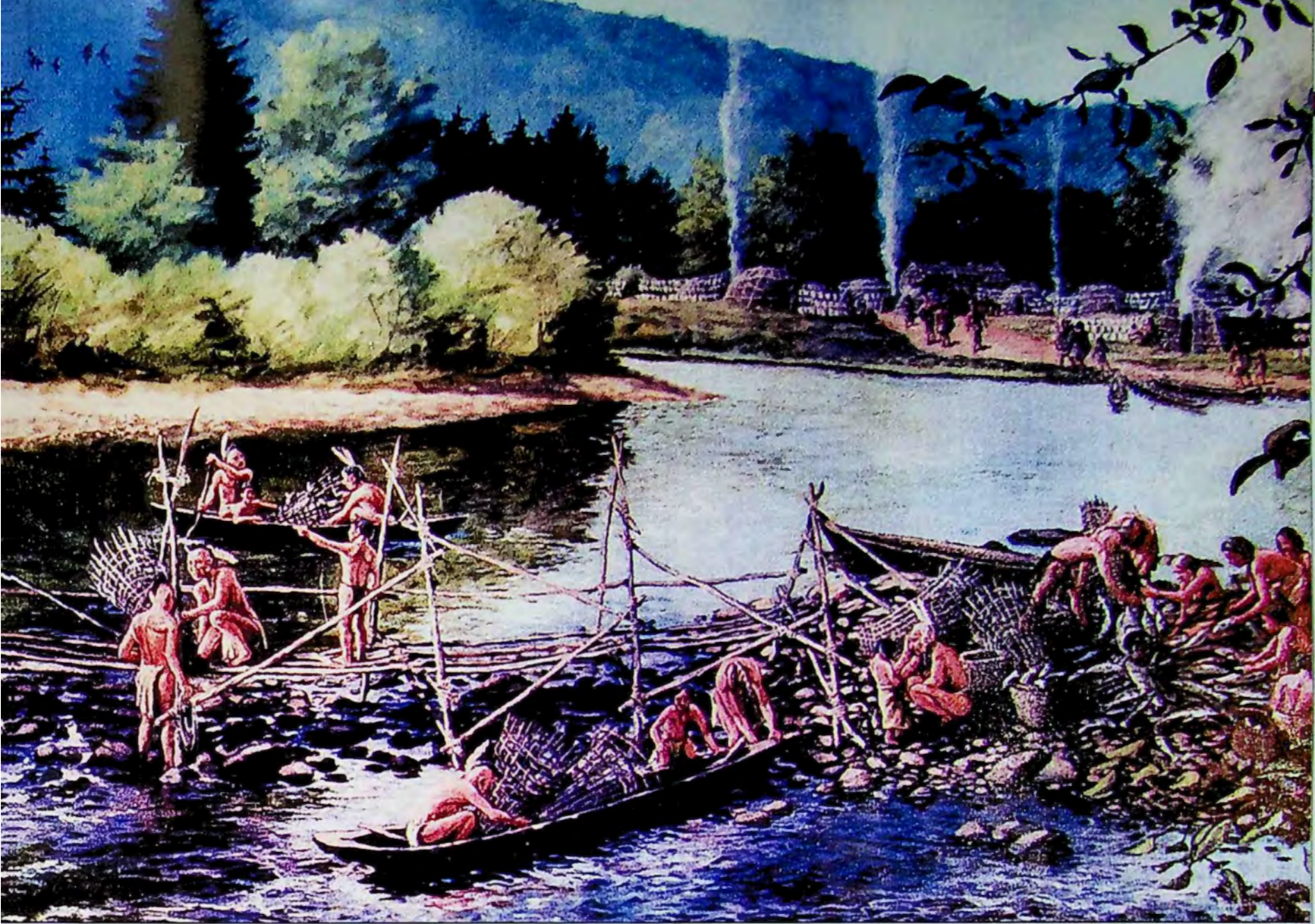


Illustration by David P. Wagner

When the water is low on some of Virginia's rivers, a sharp eye might glimpse V-shaped stone structures protruding from the water. It's the past peeking up.

The stone structures, of which Virginia archaeologists have documented 61 around the state, are likely fishing weirs that Indigenous peoples built to trap fish centuries ago. "We know there are many more yet to be recorded and suspect that there are hundreds in Virginia's many rivers," says State Archaeologist Dr. Elizabeth Moore of the Virginia Department of Historic Resources (DHR).

Historian Robert Beverley, Jr., described them in "The History and Present State of Virginia, In Four Parts" in 1705:

"At the Falls of the Rivers, where the Water is shallow, and the Current strong, the Indians use another kind of Weir thus made: They make a Dam of loose Stone whereof there is plenty on hand, quite across the River, leaving One, Two or more

Spaces or Tunnels, for the Water to pass thro'; at the Mouth of which they set a Pot of Reeds, wove in Form of a Cone, whose Base is about Three Foot, and in perpendicular Ten, into which the Swiftness of the Current carries the Fish, and wedges them so fast, that they cannot possibly return."

The weirs were just one of the many tactics that Virginia's Indigenous peoples used when catching fish to sustain themselves. Some of those ancient ways are still used today.

Experts at Fishing

Fish were a staple in Indigenous peoples' diets. English colonists admired Indigenous peoples' expertise in fishing, both learning from them and hiring them to provide fish for them to feed the colonial communities.

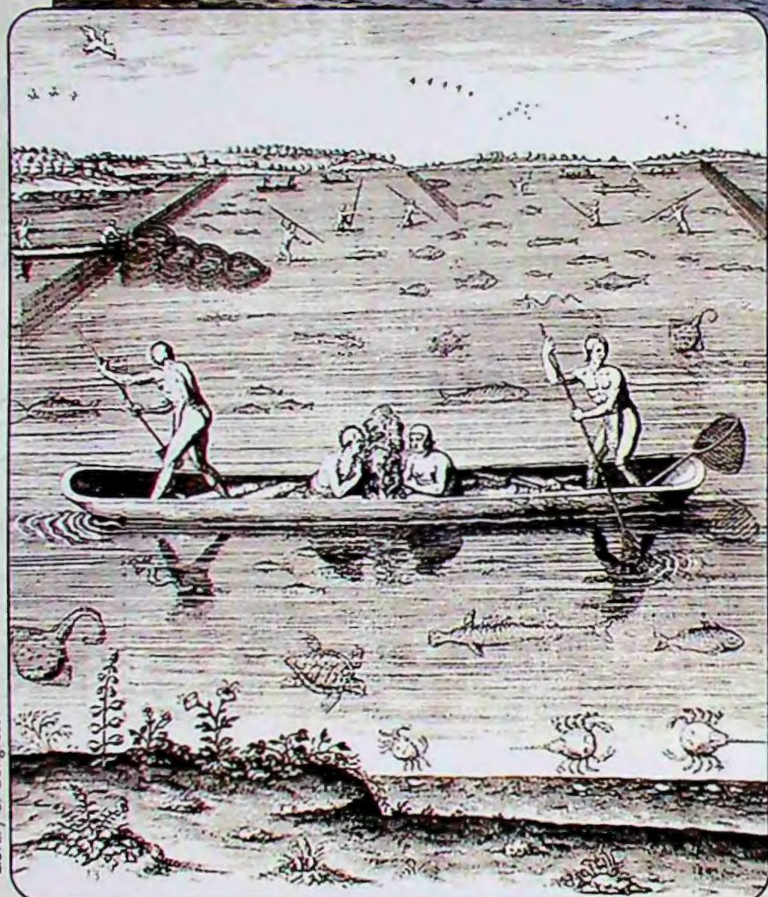
The paintings of Englishman John White from a 1585 trip to Roanoke Island in today's North Carolina have provided some insights into fishing techniques of that era. Noted

Above: Indigenous peoples in Virginia caught fish with a variety of methods, such as weir construction and eel pots depicted here as envisioned by historical artist David R. Wagner. Left: A fishing spear made of wood, animal, and hide straps or babiche.

National Museum of the American Indian, Smithsonian Institution (#205074)



A prehistoric fish weir on the Etowah River in Georgia can still be seen clearly, but many weirs have been destroyed by water flow and unknowing rivergoers moving rocks over the centuries.



The 16th century engraving "Their Manner of Fishyng in Virginia," by Theodor de Bry, inspired by a watercolor by colonist John White, reveals several Indigenous fishing techniques.

expert and author on the culture of Virginia's Native peoples, Dr. Helen Rountree, wrote that "Fishing was primarily men's work among the Powhatans, and the most common methods were angling, netting, shooting, and trapping in weirs." Most experts would say that the Powhatans' methods represent other Indigenous people's methods. Some fished from boats or canoes, hollowed-out from big logs with stone axes or charred and scraped with stones and shells. Some accounts report that Indigenous people had a fire in their canoe at night to attract fish.

A 16th century engraving done by Theodor de Bry entitled "Their Manner of Fishyng in Virginia" shows a variety of Indigenous fishing methods. Two of the men in the canoe are standing with nets. Figures in the background wade in the water with spears, while the manning of a weir shows up to the left in the image.

The caption of the engraving in colonist Thomas Hariot's 1588 book "A Briefe and True Report of the New Found Land of Virginia," describes the Indigenous methods depicted. "They have likewise a notable way to catch fish in their Rivers, for whereas they lack both iron, and steel, they fasten unto their Reeds or long Rods, the hollow tail of a certain fish like to a sea crab instead of a point, where with by night or day they strike fish, and take them up into their boats," the caption reads. "They also know how to use the prickles, and pricks of other fish. They also make wares [weirs], with setting up reeds or twigs in the water, which they so plant one within another, that they grow still narrower, and narrower, as appears by this figure. There was never seen among us so cunning a way to take fish withal, whereof sundry sorts as they found in their Rivers unlike unto ours, which are also of a very good taste."

English Captain John Smith reported in his 1608 voyage "fish lying so thick with their heads above the water as for want of nets (our barge driving amongst them) we attempted to catch them with a frying pan."

Hariot's book also describes the fish that teemed in Virginia's rivers. "The Englishman reported that the Indians caught a wide variety of fish including trout, porpoise, rayes, oldwives [probably menhaden], mullets, plaice [flounder], and very many other sorts of excellent good fish, which we have taken

and eaten, whose names I know not but in the country language," Hariot wrote. "For four months of the year, February, March, April and May, there are plenty of sturgeons. And also in the same months of herrings, some of the ordinary bigness of ours in England, but for the most part far greater, of eighteen, twenty inches, and some two feet in length."

Middens throughout the Tidewater's rivers indicate that Indigenous people also collected and ate shellfish. Today, many mounds are covered with vegetation, but there are many still remaining around the Chesapeake Bay and several

rivers. At times, Indigenous boys were tasked with diving to collect oysters, mussels, and clams. People also collected from exposed reefs.

"There was never seen among us so cunning a way to take fish." Thomas Hariot in "A Briefe and True Report of the New Found Land of Virginia"

Trapping Fish

Stone weirs built in rivers stretching almost shore to shore directed fish into a shallow area where people caught them with dip nets

or speared them. Typical weirs were V-shaped with two arms, from 25 to 50 feet long, extending from the shorelines and coming to a point with an opening like a funnel. Men stood at the point of the funnel and collected fish in a basket as they came through. As the tide receded, the fish could become trapped behind the stone walls.

They also built fence-like weirs to trap fish, especially as the tide went out. The hedging, a temporary "dam," was likely made of reed bundles or cedar branches and laid between poles set across the creek. People would paddle out at low tide and collect the trapped fish.

Indigenous people made nets from sinew or plant materials like cedar and locust bark. They would twist two or more strands of plant fibers together to make cords. For dip nets, they fashioned a wooden handle and ring and seine nets. For gill nets, they drove wooded stakes into place at each end of the net and tied a cord between two trees or other objects. They added vertical drop-pers with two lines from each knot. Some nets used bones, antlers, or wood shuttles, and some were simply tied.

Hooks and Lines

Indigenous people were skilled anglers too,



Map data ©Google

Remnants of ancient stone weirs on the Rappahannock River can be seen on a satellite image.

Putting the Puzzle Together



Many descriptions of Indigenous peoples in what is today called "North America" start in the 17th century with European colonization. The Indigenous peoples that the Spanish explorers and then the English colonists encountered were not the first people here. Human habitation has been dated at sites such as Cactus Hill in Sussex County to between 18,000 and 20,000 years ago. "If you ask Virginia Indians how long our people have been here, they will probably say, 'We have always been here,' " wrote the late KARENNE WOOD, former director of the Virginia Indian Heritage Program.

Some information about Indigenous culture comes from archaeological research. Much information about 17th and 18th century Indigenous lifeways comes from Englishmen's writings or drawings, thus seen through their eyes. Indigenous people left few written or drawn records of their own.

using fishing line made from plant fibers and a stick as a rod.

They crafted fish hooks from deer or other animal bones or antlers. "Artifacts, however, do reveal pre-Columbian fish hooks that were extremely efficient," according to the book "Making Native American Hunting, Fighting and Survival Tools," by Monte Burch. Burch describes two types of hooks: the J style and gorge hooks.

Gorge-type hooks date back to the Stone Age and were a small piece of wood or stone sharpened at both ends, with a line tied to the center. The gorge hook would be embedded in bait; when the fish swallowed the bait, a tug on the line lodged the hook in the fish's throat.

The J style of hook very much resembled the shape of contemporary hooks today, but were carved bone, sometimes with barbs cut into them. "The eastern tribes also made hooks from the wing bones of larger birds such as wild turkey and geese," wrote Burch.

Virginia archaeologists have found many fish hooks made from white-tailed deer toes. The first toe bone of deer works well because it has a rounded, natural curve.

Spears

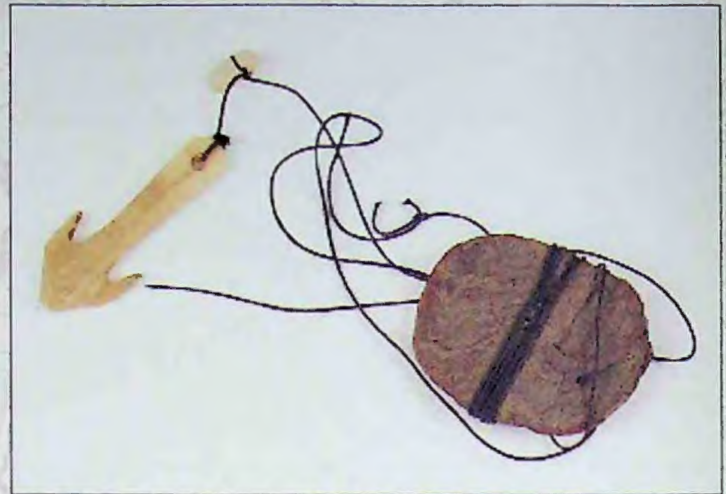
Indigenous peoples also used spears or gigs whittled from hardwood sticks or saplings, like hickory or ash, with a bone or antler tip attached to the end. Some whittled a sharp point on the end, cut in barbs, and added a wooden wedge to hold the barbs apart. With stones, they could grind a bone to make a sharp point. They stood in the water or in their vessels to spear fish from above.

Snares

When in the 1700s William Byrd II explored what to him was the "new world," he wrote about local people snaring sturgeons. They made snares out of plant fiber and could loop a snare over a fish's head or tail and catch sturgeons up to six to eight feet long.

Carp Pens

From the 1930s to the 1980s, the Patowomeck Tribe built carp pens, U-shaped structures of rough-cut lumber supported by rails, to hold fish until they could be sold. These structures have been identified in tidal creeks, like Powell's Creek in today's Prince William County, Aquia Creek in Stafford County, and Potomac Creek in Stafford and King George Counties.



An artifact of a bone hook, rock sinker, and wooden float used by the Rappahannock tribe.

National Museum of the American Indian, Smithsonian Institution (#205083)



Traditional wooden fish spear made by Buddy Jett, a contemporary citizen of the Patowomeck tribe.

Courtesy of Dr. Brad Hatch

Most of these pens were in Potomac Creek, the center of the Patowomeck community. Those fishing would remove the trapped carp with a seine and load them on trucks headed for sale.

Basket Traps or Pots

Dr. Brad Hatch, a member of the council of the Patowomeck Indian Tribe of Virginia, is today a master maker of eel pots. An eel pot is a basket-like trap made in a conical shape by hand-weaving wooden oak splints in and out and around vertical ribs. Watermen baited the pots to capture eels when



Replica of a deer bone hook.

"I make eel pots to carry on the traditions of my Patawomeck ancestors and to keep their memory alive."
Dr. Brad Hatch



Lynda Richardson/DWR

Dr. Brad Hatch holds a tarred eel pot dating back from the 1940s. Eel pots were an essential tool for catching fish for Indigenous peoples

they swam into them. A woven funnel inside made escape difficult. The traps could be weighted on the river bottom with a rock.

Eastern Stafford County tribes used handmade oak eel pots up until the 1980s, when wire pots came into use. While eel pots were commonly used by many tribes from Virginia to Maine, the Patawomeck tribe is the only tribe in Virginia still making them, Hatch believes.

"I make eel pots to carry on the traditions of my Patawomeck ancestors and to keep their memory alive," said Hatch. "The craft is important because we are the last tribe in Virginia that is still making eel pots in the traditional way and because the pots illustrate how we have been able to adapt to a changing world over the last four centuries of colonialism."

To make one, Hatch carefully assesses white oak trees for their potential and selects tall, straight, oaks about eight inches in diameter without knots or gnarls. After felling the tree, he saws it into six- to eight-foot logs, halves and quarters the logs, and removes the bark. Using the light-colored

sapwood, he cuts splints or weavers, around 21 inches long, and one-half to three-quarters of an inch wide, and scrapes or smooths them out. He then soaks the splints in water for about a week and weaves them around a wooden mold. Once the materials are prepared, he can weave an eel pot in four to six hours. From start to finish, making an eel pot can take up to a month.

A finished eel pot is usually 21 inches tall, eight inches at the base, and six inches at the top. He makes a wooden cork for the smaller end and attaches a rope.

Hatch dips some pots in tar to turn them black and make them more durable. He thinks that tar-coated pots may be more effective because eels are attracted to the darker color. He has one that dates to the 1940s.

Eel fishermen attached 50 or so pots to a line, put them in four to 20 feet of water, sank them to the bottom, and left them overnight. For bait, they used shad roe, crabs, and menhaden—whatever was in season.

Hatch learned to make eel pots from the man he calls "the actual master," Carl "Boozie" Schoen, born in 1941, who learned from his grandfather. From the 1970s to early 2000, Boozie was the only Patawomeck tribal member who knew how to make them, Hatch believes. Meeting Schoen "was life changing," Hatch said.

Except for being away for his higher education, Hatch has been a lifelong resident of White Oak, Virginia, and lives fewer than 10 miles from his tribe's ancestral villages along Potomac Creek.

He explains his devotion: "So many of our Indigenous traditions have been lost over the past four centuries due to the fast-paced changes of the modern world. My hope is that by keeping the eel pot tradition alive and passing it to others, we are able to maintain that vital link with our ancestors. The deep and ancient connections that we maintain through practices like eel pot making are far too important and fragile to be carried by only a single person. We can only sustain this practice, and the culture that it supports, by continuing to learn about it and teaching it to the next generations." ❧



Glenda C. Booth, a freelance writer, grew up in Southwest Virginia and lived in Northern Virginia over 30 years, where she is active in conservation efforts.

By Molly Kirk

The Virginia Department of Wildlife Resources (DWR) was honored to accept the State Agency of the Year Award from the National Assembly of Sportsmen's Caucuses (NASC) on December 7 at the Congressional Sportsmen's Foundation (CSF) 20th Annual NASC Sportsman-Legislator Summit in Dewey Beach, Delaware.

The award recognizes DWR's strong support of pro-sportsmen's policies, which include the adoption of a resolution to support opening Sunday hunting on public lands and proactive management of Chronic Wasting Disease. DWR also reestablished a thriving herd of elk in Southwestern Virginia and in 2022 brought back the first modern elk hunting season in the Commonwealth.

A group of five men standing on a stage in front of a banner that reads "SPORTSMEN'S CAUCUSES". The man in the center is holding a small trophy. The man on the far left is wearing a vest and a cap, while the others are in suits.

Courtesy of NASC

"Working with legislators is vital to keeping DWR aligned with the sporting community's priorities and needs," said DWR Executive Director Ryan Brown. "Sharing information and being transparent with our processes with both legislators and the public is important to DWR, and it's an honor to see CSF recognizing those efforts. I'm proud of the work that DWR does both in the management of wildlife and the support of the hunting, angling, and recreational shooting communities."

Teaching the Next Generation of Hunters

DWR Region 3 Hunter Education staff and volunteers, in partnership with the Christiansburg/Montgomery County Izaak Walton League, offered a Deer Hunting Workshop for beginner hunters in the fall of 2023. A very eager and diverse group of new hunters learned basic deer hunting skills, including deer biology, hunting strategies, scouting and stand/blind placement, firearm and hunting safety, game laws, game care and field dressing, and more. Six of the 13 workshop participants were selected to participate in a mentored deer hunt at the Radford Army Arsenal in Dublin, Virginia. Two live-fire range days were scheduled and conducted to give these novice hunters some range time to familiarize themselves with the firearms that they would use in the mentored hunts.

On November 29 and December 2, hunters and DWR mentors checked in at the guard shack bright and early and went through a safety briefing before being transported to a designated area and stand for an antlerless deer hunt. All of the six hunters observed a variety of wildlife and were coached and instructed in ethical shot considerations. Three of the six new hunters were able to harvest their first deer. DWR staff and volunteers provided instruction and assistance to field dress, skin, and quarter their harvest. The workshop and mentored hunts were a great success due



Jeff Pease/DWR Photo

to the hard work, dedication, and partnership of DWR Hunter Education staff and volunteers, DWR Wildlife staff, and the Christiansburg/Montgomery County Izaak Walton League.

Wildlife Foundation of Virginia is Honored

Virginia Governor Glenn Youngkin and First Lady Suzanne S. Youngkin presented a 2023 Spirit of Virginia Award to the Wildlife Foundation of Virginia in October 2023. Contributing to the conservation of nearly 14,000 acres of wild lands across the Commonwealth, this nonprofit is dedicated to preserving land, providing public access and outdoor recreation opportunities to Virginians, and ensuring a future for outdoor enthusiasts in the Commonwealth.

"Conserving the Commonwealth's green spaces must remain a top priority," said First Lady Suzanne S. Youngkin. "The Wildlife Foundation of Virginia is sparking a deeper connection between Virginians and nature's beauty and bounty, and we can't think of a better way to admire God's creation."

"The Wildlife Foundation of Virginia is grateful to the First Lady and Governor of Virginia to be awarded the First Lady's Spirit of Virginia Award. The Commonwealth's natural resources are extraordinary and offer her citizens abundant opportunities to explore clean water, air, and breathtaking land," said Jenny West, Executive Director of the Wildlife Foundation of Virginia.

Since its founding in 1997, the Wildlife Foundation of Virginia (WFV) has been integral to the acquisition of nearly 14,000 acres of land, much of which is now owned by the Virginia Department of Wildlife Resources (DWR) to manage for public access and wildlife habitats. With the nearly 4,000 acres that the



©Shealah Craighead Photography

Jenny West, executive director of the Wildlife Foundation of Virginia (right) accepted the Spirit of Virginia Award from Governor Glenn Youngkin (left), and First Lady Suzanne S. Youngkin (center).

WFV owns itself, the organization provides hunting, fishing, and shooting sport experiences for youth, veterans, wounded warriors, and others for whom these unique adventures would otherwise be unavailable, as well as the general public.

The Spirit of Virginia Award recognizes unique qualities and standout achievements across the Commonwealth and salutes Virginians for their uncommon contributions in private industries, education, culture, the arts, and philanthropy.



PHOTO TIPS

Column and photos
by Lynda Richardson

Consider Black and White

I started my photographic experience in black and white. I enjoyed learning darkroom techniques in high school and college and carried it on to the beginning of my photographic career shooting for the Associated Press and other news outlets. As color film came into the picture, many of us career photographers sadly waved goodbye to those rich, contrasty, black-and-white prints that we felt were the mark of true photojournalism.

Today, we are in a transitional photographic period where some cell

phones are promoted to be as good as “real” DSLR cameras. But despite this improving technology, have you noticed that cell phones have filters for black-and-white image capture? Yep, it’s true—black and white still has a role to play.

Everyone knows Ansel Adams for his brilliant and gorgeous photographs such as *Clearing Winter Storm*. What makes black-and-white images so amazing is that they force you to look at the elements of a photograph—the interaction between light and shadows, tonal contrast, framing, and depth of field.

It is a colorful world out there, but by training your brain to see the tonal values of black and white, you can improve your photographic skills.

Look for a subject with high contrast. This usually means a bright day when the sun is high in the sky and shadows are dark and highlights bright. You are looking for notable contrast between light and dark. Texture and reflections are also great options.

When working in black and white, try using the smallest aperture and lowest ISO you can to give your photographs loads of depth of field and sharpness. You want a sharp image.

Be aware that your DSLR’s histogram can help. Histograms are graphic representations of tonal value in a photograph. Blacks (shadows) are recorded to the left and white (highlights) to the right, revealing various tones of gray in between.

Want to give it a try? With a DSLR, shoot your subject in color and then shoot the same image in black and white or plan on converting it in post-processing. Some cell phones have a variety of black-and-white filters that can be found in the camera settings.

Now compare the two images. Color is normally what first grabs your attention, whereas black and white reveals the tonality of the scene but can be just as striking. This exercise will train your brain to watch for tonal values in a photograph and can only improve your photographic skills. Give it a shot, and happy shooting!

Lynda Richardson loves photographing wild things all over the world. She is the art director of this magazine.





Column and photos
by Mike Roberts

Defeating the Plastic Foe



When it comes to the continuation of the species, males fighting to establish dominance is commonplace—even among wild turkeys. And brawls between mature gobblers can be downright nasty. Much of this pecking order occurs during late winter and well before the start of the springtime breeding season, when the gobblers are still in their winter flocks.

With caruncles glowing blood-red, challengers circle each other with heads up and wings outstretched. Hard stares and antagonistic purrs are followed

up by lightning-quick, noisy, wing floggings and precision kicks aimed at driving long, needle-sharp spurs into the competitor's vulnerable breast. Feathers, blood, and grass fly as the duel eventually transitions into full-body contact. Necks entwined, the competitors lock bills and do their best to push each other to the ground. Upon separating, the gobblers relentlessly peck at each other's heads, eyes, and featherless necks.

Depending on the physical stamina of individual birds, these duels for dominance can be short-lived or last for hours. In the end, the winner often straddles the defeated gobbler's back

to assure the message is conveyed in permanence.

One of my favorite outdoor experiences occurred in a Campbell County apple orchard several years ago. From inside a camouflaged, photography blind, I captured image after image of a mature gobbler's blur of violence as he pecked and spurred my expensive jake decoy until it was a functionless piece of plastic and no longer a threat to the dominant bird. The photographs of that hour-long episode are proof that Mother Nature is not always the kind, old lady she is sometimes considered to be by those less familiar with the raw reality of wildlife behavior.

A lifelong naturalist and wildlife photographer, Mike Roberts enjoys sharing his knowledge with others. You can contact him at: return2nature@aol.com.



Check out this great video of a wild turkey attacking a decoy!

<https://bit.ly/48vBjc3>

SCAN HERE



Living Habitats

Column and photo
by Stephen Living

Build a Better Bird House

A popular way to help enjoy and watch birds in your yard is to provide a bird house. While most songbirds build their nests in trees, shrubs, or even on the ground, some species nest in cavities or holes. In a natural setting, these cavities may occur where branches break off from trees or are previously excavated by various species of woodpecker. Chickadees, nuthatches, wrens, and bluebirds are just a few of the common backyard birds that will take up residence in a bird house, but there are many species—including owls and ducks—that will use cavities. It's not just birds—wildlife like flying squirrels and tree frogs will use this habitat to nest or just take shelter in.

If you've decided to put up a bird house, the first step is to be sure that your house will be safe and effective in providing habitat. There are many bird houses available for purchase online and in stores. Unfortunately, many of them aren't suitable for birds and either won't attract the birds you're hoping to see or, in the worst case, can be harmful. Arts and crafts projects or decorative bird houses generally aren't suitable for birds. You can still use them to decorate indoors, but permanently plug the opening if they'll be placed outside. Adorable little hummingbird houses may have popped up on your social media feed—rest assured that no self-respecting hummingbird has ever or will ever use one of these.

A good bird house design allows it to be easily opened and cleaned following the breeding season. Drainage holes, a recessed floor, and a sloped roof will keep the nest dry, which is important as damp conditions are unhealthy for

young chicks. Boxes without cracks or gaps will keep out rain and wind. Once the weather starts to warm, keeping cool is the challenge. Ventilation holes or a gap in the side walls near the roof help provide airflow that can prevent overheating while keeping the rain out. An overhanging roof provides extra shade.



Bird houses are best constructed from untreated wood like cypress, cedar, or pine. There is some debate as to whether or not painting the exterior of bird houses with light-colored, water-based paint or clear sealant is a good practice. In theory, it can help preserve the box, and light colors might help keep the box cooler during summer months. But there are questions about off-gassing from paints or sealants. As there isn't any research demonstrating a benefit one way or the other, it is probably best to stick with unpainted wood, which most closely mimics what birds would

be using in natural settings. A well-built, untreated box can last for many years and birds often show a preference for "weathered" boxes.

Predation is a natural part of the life cycle of wildlife and this can include prey species using bird houses. While a certain amount of predation is unavoidable, there are some simple steps that can help provide safer nesting for birds. Don't attach nest boxes to trees or fence posts. These are very easy to climb and provide easy access. Metal conduit poles or pipe are great alternatives. Adding a baffle or predator guard can provide additional protection. If predation occurs, don't hold it against the predator; they're just fulfilling their role in the web of life.

Where exactly to place your nest box will vary depending on what species you're hoping to attract. Place the box somewhere it won't be disturbed frequently, but you can monitor and enjoy it.

If you're ready to go shopping for a bird house this spring, look for houses that meet the requirements above. Your local shop specializing in wild birds can be a great place to look. Building your own bird house is a simple woodworking project and a fun family activity. The NestWatch program of the Cornell Lab of Ornithology has more information on what makes a good house, along with diagrams and instructions to build and place bird houses for many different species of birds: nestwatch.org/learn/all-about-birdhouses/.

Stephen Living, the DWR habitat education coordinator, is a biologist and naturalist with a lifelong love of wildlife and nature that began in the woods and streams of his childhood.



Shortly after I moved to Richmond County, a local friend and seasoned turkey hunter offered me the chance to go with him. I couldn't refuse. Our second morning out was a thrilling success, and he could hardly contain his enthusiasm. Having somebody share the excitement amplifies the moment and fosters a camaraderie that dispels age, gender, and social differences. It's part of the reason that experienced hunters are willing to mentor others to be safe, successful, ethical outdoor enthusiasts.

With my first gobbler tagged, I had a new culinary challenge. Often just the breasts are used because the legs and wings are hardworking, lean, and tough. Even so, I wanted to use as much of the meat as possible. I took my turkey meat home along with a beautiful tail fan, a hefty 11-inch beard, and a lifelong memory.

This soup develops an abundance of flavor with a deep golden-brown color as a result of the reduction that happens during the long, slow simmer. Two wings and two drumsticks yield almost one pound of meat. Cooking the noodles separately prevents them from soaking up the stock and overcooking.

Cream of Turkey Noodle Soup

Serves: 4 as a main course

Time: 7 hours (mostly inactive)

2 whole bone-in turkey drumsticks
2 whole bone-in turkey wings
9-10 c. turkey or chicken stock (or more)

3 oz. fresh asparagus, cut into $\frac{1}{2}$ " pieces
4 oz. fresh leeks, sliced into $\frac{1}{8}$ " rings
 $\frac{1}{4}$ c. unsalted butter, divided
16 fresh spinach leaves, cut into chiffonade
 $\frac{1}{2}$ c. heavy cream
 $\frac{1}{4}$ c. all-purpose flour
3-4 Tbsp. instant mashed potato flakes
Salt and freshly ground black pepper, to taste
 $1\frac{1}{2}$ c. uncooked fine egg noodles

Put cold legs and wings into a stock pot just large enough to fit in a single layer. Add enough cold stock to cover and bring to a low simmer over medium heat (do not boil). Skim off any cloudy particles that float to the surface. Reduce heat and poach (without boiling) five to six hours or until meat separates easily from the bones when a meat fork is inserted.

Transfer meat to a bowl and cover loosely with aluminum foil until cool enough to handle. Pull all meat off the bones and dice into bite-size pieces; cover and set aside. Pour stock through a fine strainer and return to the pot; there should be about 5 cups (if not, add more stock to equal 5 cups).

Heat 2 Tbsp. butter in a sauté pan over medium heat. Add the leeks, asparagus, and a pinch of salt and sauté until leeks have lost their sharpness and asparagus is tender, about 10 minutes; set aside. Cook egg noodles according to package instructions, drain, and toss with 1 Tbsp. butter to coat and separate the noodles; cover and set aside.

Bring stock to a simmer over medium heat. In a small bowl, whisk together the heavy cream and flour to make a slurry. Stirring constantly, add the slurry to the stock and continue to cook and stir another three to four minutes until mixture thickens slightly. Reduce heat to low and whisk in 2 Tbsp. of potato flakes. Wait a few minutes to allow the flakes to completely hydrate then add more, 1 Tbsp. at a time until desired thickness is achieved. Gently stir in the meat, sautéed vegetables, and the remaining tablespoon of butter and heat through.

To serve, divide the egg noodles between four large soup bowls, top with spinach, and ladle the hot soup over top.

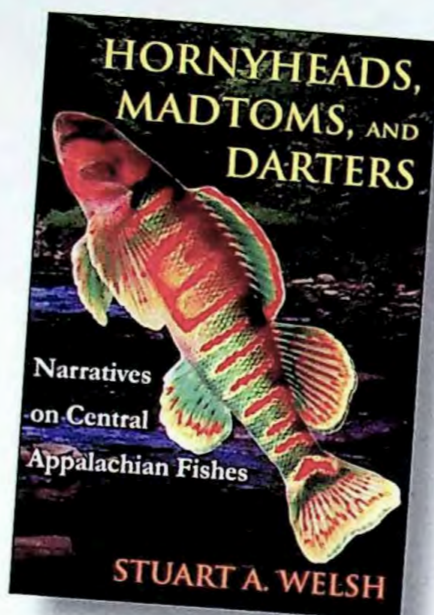
Wendy Hyde lives on the Northern Neck of Virginia with her husband and two dogs. Visit her website at www.girlgamechef.com for more recipes; find her on Instagram as @girlgamechef.



Excerpted From...

Hornyheads, Madtoms, and Darters: Narratives on Central Appalachian Fishes

By Stuart A. Welsh 2023
Ohio University Press
ohioswallow.com



I often find myself immersed in nature, particularly when snorkeling in rivers of the central Appalachians. River snorkeling provides a unique opportunity to observe fish behavior. Once, as a graduate student, I observed an unusual behavior, one that I did not fully understand until later in life. While immersed in the river, I was closely watching the swimming behavior of a six-inch (15.2-cm) Smallmouth Bass. This species is widely distributed across the central Appalachians, occurring commonly in medium to large rivers (see chapter 16, "Gamest Fish That Swims"). The Smallmouth Bass, with slight and seemingly effortless fin movements, turned to look toward the stream margin. I followed its gaze, and in the crystal-clear water we both began watching a foraging shoal of seven Dusky Darters.

My interest turned to darter behavior, because all of my previous Dusky Darter encounters were of single individuals, never shoals. A shoal of fishes forms when individuals aggregate and orient in different directions, sometimes foraging together as a group. The shoaling darters were about three inches (7.6 cm) in length. Small fishes such

as darters are often focused on their surroundings for the presence of predators, even while foraging. Thus, fishes in a shoal must balance two conflicting demands: maximizing foraging success while minimizing the risk of predation.

In this triangular encounter, the Smallmouth Bass was about three feet (91 cm) from my facemask, and the Dusky Darters were about four feet (122 cm) from me and the Smallmouth Bass. The darters closely watched the bass, while I waited with expectations of observing the bass' predatory behavior. The bass did not pursue the darters. Instead, two darters left the group and began to approach the bass. My initial reaction was to question this seemingly ill-advised behavior. Why would two small darters leave the safety of the shoal to approach a potentially life-threatening predator? The two darters were nearly side by side in their approach, with one slightly lagging behind the other. The lead darter moved a few inches, then the trailing darter moved a few inches.

In this copycat scenario, the two darters approached the bass with an iteration of short movements, stopping at about one foot away from the bass. The bass still did not pursue the two darters. Then the lead darter slowly turned and returned to the shoal, closely followed by the other darter. Apparently the bass was sated; its motivational state was to observe and not to attack. The shoaling darters foraged on, as if no threat were present. Possibly the returning duo had delivered a message to their shoalmates, that the current threat level was low. Otherwise their decision to approach the bass was a mystery.

Sometime later I stumbled onto a published paper that discussed an interesting behavior associated with shoaling fishes. The title of this paper was "Dicing with Death: Predator Inspection Behaviour in Minnow Shoals." I knew that fishes often form shoals, a common behavior that reduces the probability of predation of members of the group. What I did not know was that when shoaling fish are being surveilled by a predator, one or more individuals will sometimes leave the safety of the shoal and swim toward the predator to assess the threat level. This interesting behavior, called "predator inspection," likely explained the Dusky Darter-Smallmouth Bass interaction. With further reading, I learned that this behavior was well documented for many small-bodied, shoaling fishes, where inspection of potential predators can occur by one, two, or occasionally three or more individuals.

Excerpt published courtesy of Ohio University Press.



March 9
**National Archery in the Schools
 Program (NASP)
 State Tournament**
nasptournaments.org

April 3-9
National Wildlife Week
nationalwildlifeweek.nwf.org/

April 6
Trout Heritage Day
virginiawildlife.gov/fishing/trout/trout-heritage-day/

April 6-7
**Youth and Apprentice Spring
 Turkey Hunting Weekend**
virginiawildlife.gov/hunting/regulations/turkey/#youth-spring

April 13 – May 18
Spring Turkey Hunting Season
virginiawildlife.gov/hunting/spring-turkey-hunting-in-virginia/

April 13
Virginia Osprey Festival
virginiaospreyfestival.org/

April 22
Earth Day
earthday.org/

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PICS FROM THE FIELD



Congratulations to **Elizabeth Brown** of Mathews County for her cool photograph of an otter eating a slippery eel. Elizabeth reported, "On a misty morning, we spotted this otter on our boat dock, wrestling with an eel that kept trying to slither away between the dock boards. It took the otter a good 20 minutes to finish his meal." Great shot, Elizabeth!

You are invited to submit up to three of your best photographs for possible publication in *Pics from the Field*. Please include contact information (email and phone number, city or county you live in) and send only high-resolution (minimum size, 4"x6" at 300ppi) jpeg, tiff, or raw files via email attachment or WeTransfer to: editor@dwv.virginia.gov. We look forward to seeing and sharing your best work! HAPPY SHOOTING!

Help a Turtle Cross the Road



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Moving a turtle out of the road safely and thoughtfully can help it survive.

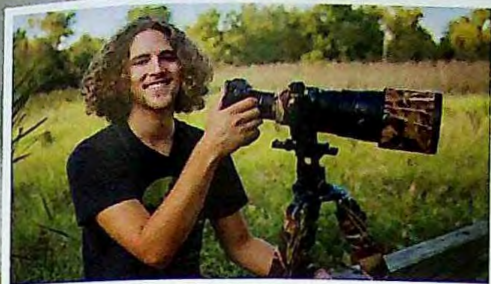
What do you do if you're tootling down a back road and see a turtle crossing in the lane of traffic? As the weather warms up in the spring, turtles start to move around, looking for food, territory, mates, and nesting locations. Sometimes, roads are in their path, and they risk being hit and killed by motor vehicles. Deaths to adult turtles can negatively impact the local population at a much larger scale relative to many other species, mostly because turtles are slow to grow to reproductive maturity. When a high number of breeding adults disappear, population declines and localized extinction are likely to follow in future years.

Spring is the time when turtles are on the move, and crossing roads can put them in danger.

- Make sure you're helping safely. Pull off to the side of the road in such a way that doesn't impede traffic or jeopardize your safety or the safety of others. Keep an eye out for oncoming traffic.
- Use care when moving the animal. Depending on what species it is and if it's injured, it could bite. If you can, it's best to simply stop traffic to allow the animal to cross on its own. Don't pick up the turtle by the tail.
- Don't divert the turtle. If you determine the animal needs help crossing, move it to the side of the road where it was headed.

Even if you perceive a turtle to be in a bad location, do your best to relocate it as little as possible. Turtles are creatures of habit that make similar movements to the same places year after year and generally have a very small home range. "I always tell people to treat a turtle the same way they would want someone to treat their great-grandmother when she is crossing the road," said DWR Watchable Wildlife Biologist Meagan Thomas. "Would you want them to safely stop their vehicle and assist her to the other side of the road? Or would you want them to put her in their car and drive them 20 minutes down the road to a neighborhood pond where they let her go?"

For the story on how a group of conservationists helped seasonally close a road frequently used by turtles, read: virginiawildlife.gov/blog/Jamestown-turtle-road



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